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TORONTO CANADA

STATE MEDICINE SANITARY REVIEW HEALTH PROGRESS

The Official Organ of the
Canadian Public Health Association
and of the
Ontario Health Officers' Association

DR. GORDON BATES
Editor

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The Public Health Journal

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Vice and Drugs in Montreal

By Dr. A. K. Haywood,

Superintendent, Montreal General Hospital.

Address delivered before the Montreal Canadian Club, January 8th, 1923.

MR. PRESIDENT, and members of the Canadian Club—I must first apologize for having written out beforehand what I have to say to you to-day. This has been done deliberately, for I intend to make certain statements and some accusations that will undoubtedly be challenged, and I hope may form the basis of a public scandal, and failing that a sincere awakening of public opinion in this city, and also because I am inclined to be impetuous, and in the heat of my earnestness to-day I must avoid being carried away at a tangent and making the slightest exaggeration of facts that are almost unbelievable in this so-called civilized country and this community in particular. Business conditions during the last two years have caused the members of this Club grave concern. It has been the topic of several speakers that have appeared before you, but there are two lines of business that have not suffered—the drug traffic and commercialized vice.

Approximately ten times out of ten in cases where municipal officials are accused of laxity, negligence, or graft, in connection with the drug menace or commercialized vice, they throw out as a smoke screen an appeal to civic pride. This consists first of a denial that the vice exists, and second of a plea that the group making the accusations are "smirching" the fair name of our city. Even after an under-cover investigation demonstrates the activity of the exploiters many complacent citizens who do not come into direct contact with the vicious conditions, take sides with the officials, and agree that the skeleton, if there be one, might best be left in the cupboard.

For the past thirty years there has been a steady increase in the number of those addicted to dangerous drugs. This increase has been so rapid of late years that it is causing grave concern to all who have studied it, or who have come into contact with its inevitable results—crime. Reliable statistics have not been prepared as yet as to the numbers of addicts in Canada, but in those places where statistics are being gathered the results are most pessimistic. The seriousness of the situation in Montreal was brought home most forcibly during the past year to the management of the Montreal General Hospital, for during that period 128 cases of narcotic poisoning were admitted to the emergency department, and of these 14 died, in spite of the efficient and at times drastic treatment meted out to these patients. Mark you, these 128 cases were all brought in unconscious, due to an overdose, and give no estimate of the numbers of addicts taking drugs, although court house officials estimate that for the past year 1922, approximately 1,000 cases of violation of the Narcotic Drug Laws will be dealt with. In 1921 there were 552 cases in Montreal. In Vancouver for 1921 there were 858 convictions as against 293 for 1918. In 1921 the Federal Government prosecuted 23 doctors, 11 druggists, 4 veterinary surgeons, 165 illicit dealers, 634 Chinamen—a total of 835. These do not include provincial or municipal convictions. Dr. Amyot, Deputy Minister of Public Health at Ottawa, recently stated that Canada has between 12,000 and 15,000 drug addicts. Judge Emily Murphy, in her book, "The Black Candle," estimates that in Canada and the United States there are 2,000,000 addicts.

It might be interesting to you if at this time I enumerate and briefly describe those drugs which cause addiction: 1. *Opium* is the dried exudate obtained by incising the capsules of a poppy grown chiefly in the East, and Far East. It contains 9 per cent morphine and 3 per cent. codein. Opium is smoked and its effect is to produce forgetfulness and a period of tranquility. It excites the senses, and through its medium the seduction of women becomes easy. The sleep produced by smoking opium is a long one, but the awakening is most unpleasant, being accompanied by a head that knows how to ache, no appetite, and a tongue that is properly furred. Opium smokers are seldom violent. They are clannish, and at their orgies prefer company. 2. *Morphine* is an alkaloid of opium, and is used by means of hypodermic syringe. The widespread belief that morphine brings about an uncanny mental condition, accompanied by fantastic ideas, dreams and what not, is wrong. It does allay pain, and produces a feeling of well being.

Under its influence ideas seem to flow freely. The very action of morphine works toward the establishment of a habit, and is the most difficult of all narcotic habits to break. An hypodermic injection of any kind should only be given with strict surgical cleanliness and yet, one finds among morphine habitues a lack of this knowledge, and this promiscuous use of the hypodermic needle is attended with serious results from an infected solution or a dirty needle. It is not uncommon for them to insert the needle into their arms without even rolling up their sleeves. This almost always results in the formation of abscesses. I call to mind one girl of 22 that was brought into the hospital this summer from a Toronto train. She had evidently taken an overdose for she was unconscious, and when the nurse had prepared her for bed, her body was found to be covered with recent abscesses, and the scars of many old ones. Hers was a sorry tale—bad associates—taught to use morphine, and in order to procure the drug she became a prostitute, and had gone to Toronto at the Exhibition time to ply her trade. Her capital when she was brought into the hospital consisted of a small bag in which was a few cents, a hypodermic syringe and several cigarette butts. She admitted to me that colour and race were not discriminated against in her clientelle. The extremes to which addicts to morphine will go in administering the drug to themselves are almost unbelievable. Several cases have come under my observation where, lacking a hypodermic syringe, a small incision was made in the skin, and the drug solution injected therein with an ordinary medicine dropper. 3. *Heroin* is obtained by treating morphine with acetic acid. It is three times as strong as morphine, and its addicts are possessed of a much greater desire to pass the habit on to others. 4. *Cocaine* is obtained from the leaves of the South American cocoa plant. It is used by itself, and as an adjunct to morphine. Unlike morphine it is sniffed up the nose in the form of a white powder, and for that reason is much more handy for its users. The addicts of cocaine are called snow birds, while the drug itself goes under the name of coke, happy dust, snow. It is peddled in small paper packages which are called decks. These may contain from one to many grains. Its action on the human organisms is quite different to that of opium, and its derivatives, that of cocaine being mental, while that of opium is physical.

While it is safe to say that the majority of the users of narcotic drugs inhabit the underworld, one cannot lose sight of the fact that it has found its way into every class of society.

Very often this habit is begun through curiosity on the recommendation of some friend who is an habitue, or it may be a legacy left by a careless physician. I am sorry to say that in that noble profession there are physicians who get into a rut and prescribe narcotics under a host of trifling indications, and to go still further, there is unfortunately a small percentage of medical men who are addicts themselves. Bad associations, a desire to speed up one's working powers, and the ignorance of practically all laymen of what narcotic addiction is, are no doubt the main factors in the appalling increase in this condition. A single drug user in a community should be considered a menace to the whole of it, because of their insane desire to pass the habit on.

One hears a great deal regarding prohibition and its relation to the increase in drug addiction. The opinions on this subject are as numerous as the sands of the seas. I personally think, after a careful study of the situation, that there is very little connection between the use of alcohol and the use of drugs. One thing we are sure of, and that is, that drug addicts are seldom alcoholics, and also that drug addiction has gone on quite irrespective of the existing liquor laws in countries and cities elsewhere. The average age of drug addicts is between 16 and 25—one seldom sees as a confirmed alcoholic one so young. There are very few drug addicts over 40 which seems to be about the proper age for labelling a person an alcoholic.

Our Federal Government will report to you that they now control the legitimate importation of narcotic drugs into Canada. They do, and very capably, too, but they do not control the supplies brought in by drug rings, which supply is many times the amount brought in for legitimate purposes. Drug rings are international, national and municipal. It has been said that Germany is unloading, at great profit, large stocks of narcotic drugs; that Japan is the middle man—although the Japanese as a nation, are not drug users. Whether these facts are correct or not, we do know that large quantities of narcotics are being smuggled into Canada and the United States. Dock workers, porters on trains, sailors, crooked revenue offiicers and others, all combine to smooth the way. A book could be written of the methods adopted by the smugglers. According to court house officials of Montreal, over $1,000,000.00 worth of morphine, cocaine, opium and heroin were smuggled into this city last year, and disposed of. Something like $200,000.00 worth was recovered. One reads in the daily press of frequent raids on hotels, etc., in New York, and as much as $520,000.00 worth has been found in one raid. Writing of this matter

one Canadian high in official circles, said lately that "It should be remembered that while Montreal is almost the worst city in Canada in this respect, it is owing to the geographical location. Being a seaport in addition to being a terminus of nearly all Canadian and United States railways, and within 35 miles of the American border with the best of highways connecting it up with the large United States cities, and being the largest city in Canada it is the national rendezvous for these large drug rings and crooks." "Birds of a feather flock together." Members of the underworld from all over the United States and Canada, make Montreal their headquarters for carrying on their illicit drug traffic. One instance in particular stands out in my mind which you will no doubt remember. A Mrs. Bruce and a Miss Wardell, age 21, were found unconscious on the Montreal express near New York city, suffering from overdoses of heroin. The Wardell girl died on the way to the hospital, according to the police. Mrs. Bruce said, "We fell into the hands of a crowd of drug smugglers in New York and Montreal who got us under their control with drugs and used us for their own purposes. We both carried drugs in suitcases between Montreal and Boston, and made much money for the men. Dorothea's man was very rich and used to let her wear his diamonds sometimes." These statements were corroborated by the police for the Wardell girl had been arrested in Syracuse with two suit cases full of drugs and wearing $35,000.00 worth of diamonds.

One has only to read in a Montreal paper to realize that there are hundreds of small peddlers in this city, and that they do a very thriving business. An ounce of cocaine can be purchased for $20.00, which is divided into 500 decks and retailed at $1.00 a deck. Provided the peddler is honest he only makes by this transaction 2,500 per cent. But we would not look for honesty in anybody that would prey thusly on human frailties. The original ounce is generally diluted and mixed with boracic acid, chalk, etc., and instead of a paltry 2,500 per cent., they make 5,000 per cent. When one considers the profit in a business like this, one wonders why judges persist in punishing by a fine. The usual hang outs for these peddlers are in cafes, especially the all night restaurants, night clubs, dance halls, and Montreal has seen fit to provide plenty of these hang outs, in order that one desirous of partaking in this pastime may not be put to too much inconvenience.

One seldom hears of those high up in this business succumbing to the law. They keep well in the background and reap dividends

on their original investment that would make the ordinary banker or financial man's mouth water.

An addict will need from $3.00 to $30.00 worth of drugs a day. The mere fact of their addiction makes them irresponsible as wage earners. Men supply their own needs by stealing and women by prostitution. If an addict becomes a nuisance to his particular vendor, and cannot find the necessary funds to purchase his drug with, the peddler promptly plants a deck on him and gets him pinched. It reminds me of the old song, "If you haven't any money you needn't come around." But let a peddler get pinched and you will see many run to his rescue to pay his fine, especially is this true, if he happens to be an addict in addition, for they are mortally afraid that his drug may be cut off, and in order to get even a small shot he will squeal. One would like to feel that this would take place, but from articles that have appeared in the press this summer, the mere fact of being sent to jail does not mean withdrawing the drug. In fairness to the jail officials one should remark that it is also done elsewhere, and it is doubtful if it can be discontinued here under our present system.

A drug addict has little if any idea of right or wrong. Eighty-five per cent. of narcotic prisoners have criminal records. Heroin and cocaine are responsible for many of the violent crimes that take place in Montreal, and one can almost trace the incident of crime and drugs in this city. It has become quite noticeable that after each seizure of any size of drugs by the Federal police, please note that word Federal, that there is a marked increase in crime, hold-ups, burglaries, etc. This is due to the temporary shortage in the supply of drugs and a resulting increase in price.

If crime is the resulting evil of drug addiction in men, so also is prostitution the evil in women. It is only a short trip for a young girl from the most respectable home to a disorderly house. The usual route is as follows: stealing, Chinese cafes, cabarets, negro and Chinese opium joints, and last, but the surest of all, the disorderly house. You may remember that in the past year there have been several cases of deaths at so-called dope parties. The details of those parties were quite the most revolting exposures of the life of a section of our community, that one could dream of. It is not uncommon for parties of 8 to 14 men and women to gather in these disorderly houses and administer drugs to each other until a state of mind is arrived at that makes for degeneracy and immorality that is almost unbelievable.

One recorder stated on October 19th that this practice must

stop. His information was that most of the drug circulates through the medium of disorderly houses, and that he was going to stop it. In the *Star* of October 22nd, it states that disorderly houses have become the special mark of the raiders who have learned that they generally offer to the trafficker the most fertile field for vending drugs, and the recorders have warned disorderly house-keepers that in future they will be arrested if it is found that they have knowingly permitted a drug ghoul to operate on their premises. You could be pardoned if, after these two statements you should burst out laughing, for I can assure you it is well worth a laugh, and until we loose the strangle hold of the prostitute on our populace we can never hope to make any marked progress in staying venereal diseases and drug addictions.

It isn't vice that is so alluring, it is the mystery we make of it, and one does not go far in fighting this traffic until one meets with opposition, treachery, threats and serious menace, because they fear publicity.

I hope I have convinced you that there is a drug menace. If I have, what are we going to do about it? The most obvious thing would appear to be by law, or should I not say, by law enforcement. The Dominion Government has passed a Narcotic Drug Act, which as a Dominion measure, is excellent, and I might add, in the hands of a very capable Health Department at Ottawa. Thanks to some of the clauses of the British North America Act this law is of little practical value in the hands of provincial and municipal officials. It is therefore quite obvious that we should have provincial laws to govern this traffic. Manitoba has passed laws for this purpose. Quebec, I am glad to say, is about to do the same thing, and I feel sure that the authorities will give great care to the drafting of this law because they will appreciate the difficulty in drafting such a law so that it cannot, in some way, be circumvented. Fines are not deterrents, prison preferably accompanied by the lash for all peddlers will undoubtedly help. A unification of police efforts, by that I mean a co-ordination of Federal, provincial and municipal police squads for narcotic purposes. Much can be accomplished by close co-operation between these forces. Fines only tax the trade, and the punishment to be of value should be preventive. One should not show mercy to the beast that will sell drugs illicitly.

Doctors and druggists who sell drugs for illegal purposes should have their licenses to practice revoked, if not for good, for sufficiently long to bear warning to others.

The Federal Government, through the Department of Health,

is able to control the importation of these drugs for legitimate purposes. At the third Assembly of the League of Nations held at Geneva in September, 1922, its commission brought in a report on the traffic in opium and dangerous drugs. Many countries have not yet ratified the opium convention of 1922. The commission observes that "so long as the dangerous drugs are produced in quantities exceeding the legitimate requirements, a great danger exists that the surplus will find its way into illigitimate channels. A control of production, so as to limit to the amount required for medical and legitimate purposes, will therefore be the most effectual way of putting a stop to the illicit traffic." Unfortunately for this plan, I have just heard that in Germany they have discovered methods of manufacturing cocaine from coal tar derivatives. If that is so, heaven help us.

Laws are to be enforced. Some of our so-called criminal lawyers' chief ability and duties seem to be to persuade the crook that he is earning his fee by protesting, cross-questioning, repeating, denying, forbidding, objecting and quoting. He wastes the court's time and money, and often by some legal technicality or quibble, frees the crook. Some day a judge is going to get mad and kill one of these shyster lawyers.

Let us now pass on to the question of dealing with the addict. I have been asked the question of why cure them at all if they nearly all slip back. There are several reasons why.

1. For the safety of the community.
2. For prevention of crime.
3. To save millions spent on drugs.
4. The money lost by thousands who will not work.
5. To impress on the Government who should pay the bills, the amount and necessity of stopping the traffic.

I will not burden you with the technicalities of the cure, but will outline those in use at the present time.

1. *Ambulatory or slow reduction cure.*—The principle of this method is to reduce the strength and amount of a drug, not allowing the patient to suffer, and making the weaning period as long as is necessary. This has practically no chance of success unless the patient is willing or forced to be confined under such conditions that he can be strictly controlled and supervised. In 1920 New York established a clinic for this treatment, and in nine months treated 7,464 addicts without a cure. This clinic became a rendezvous for peddlers who found a ready market for their illicit wares when the so-called minimum dose was arrived at.

2. *The sudden withdrawal method* consists in stopping the drug abruptly altogether from the start. This has been called cruel and dangerous. The suffering, it is true, is acute, and extends over a period of several days. But it is remarkable how they will then pick up, and 30 to 40 pounds increase in weight in a few weeks is not unusual. While undergoing treatment these patients will cheat at every turn. Their skill in concealing drugs is uncanny. I saw one patient this summer who had wrapped around each hairpin drugs in paper, the color of her hair, and by this method was able to deceive us for some time.

At the present time Montreal drug addicts are treated as prisoners, not as diseased people, and as such are sentenced to jail. All authorities are unanimous in agreeing that institutions properly staffed should be provided for the care of these addicts if for no other reason than to incarcerate one whose main desire in life is to bring others to that depth from which there is little hope of resurrection. But what hope have we in Montreal for such institutions when we cannot yet boast of a hospital for tuberculosis, a hospital for incurables, hospitals for venereal disease or homes for convalescents?

So many drug addicts have been sent to jail here that recently a number were sent to Quebec because our jails were full.

Drug addicts can be cured, but we are told that 90 per cent. slip back because we have no follow-up system. As a rule, the first person they meet on their release is a peddler who is always on the watch to grab an old customer, or make a new one. The longer supervision is extended after the habit has been broken, the better the chances are for a lasting cure.

There is no question about it prostitution must be ended, or perhaps I should say, commercialized vice must be ended if we are to make any inroads into the drug traffic,, for almost every prostitute uses narcotics and the majority are distributors. Let me read a few newspaper clippings from the Montreal press during the last year. "Another woman trafficker, Rose Valiquette, was sentenced to jail for 12 months for selling cocaine. The woman, a self-confessed vendor, was the victim of a raid on No. 130 Cadieux Street a week ago yesterday." "Trapped by the City Narcotic Squad with marked money in her purse at No. 135 Cadieux Street. Blanche Ouellette, woman drug trafficker, this morning told the recorder that the drugs belonged to her employer, now in Bordeaux jail. Her employer in this case being the pimp who lived off her girls"—or this—"How many times have you been condemned,"

asked the recorder who was told the woman had already admitted keeping a disorderly house, "Oh, I don't recall," said the prisoner,—or this—"Corperal Churchman in giving evidence yesterday afternoon, concluded his story of the arrest of Dr. R. St. Jacques, of 34 St. Andre Street, stated that the doctor had told him he sold the drug to the woman because she kept a disorderly house," or this—"After deliberating 15 minutes a jury in the court of King's Bench, late yesterday afternoon found Elie Lafortune guilty of manslaughter in connection with the death of Paul Rolland, 22 years of age, who died from a dose of morphine, administered in a disorderly house on St. Denis Street on January 18th last." (Read list of houses from card) and the joke of this whole thing is, that these houses are still open, and I can assure you doing well. There are many in this audience who are quite prepared to come forward in all earnestness, or in ignorance and enter into long arguments as to a city's policy regarding commercialized vice. They will say that prostitution has gone on for thousands of years and will continue to do so in spite of all we can do, or they will give one long argument, re toleration, segregation, licensing, and medical examinations. These arguments must be answered.

Tolerance deals with the vice and grows out of negligence and indifference. It results from an attitude of mind which fails to conceive of prostitution as more than the immorality of two willing individuals, and which neglects to take into account prostitution as involving physical and moral ruin to some, and ill-gotten gains to others. It exposes our police department to the inevitable dangers of bribery and corruption by the creation of an illegally privileged class for them to deal with. That a system of toleration exists here is amply borne out by the court records. Prior to the appointment of the last administrative commission it was quite the exception to hear of a disorderly house being raided. The Committee of Sixteen led by the late Dr. Symonds, after the expenditure of some $25,000.00, presented facts and figures to this Commission, which led them to give orders to clean up this district. Only that commission can relate the many difficulties, some almost impassable, that they met with. However, in the last year of their reign 407 raids were made on disorderly houses, and in 1922 only something under 250 raids were made, not because they were disorderly houses, but because of drugs or liquor. One of the members of the Executive Council was asked to meet the Committee of Sixteen last Spring, and the situation laid plainly before him with a request that he would draw the attention of his colleagues

to the facts as presented to him. He was a most attentive listener, and an equally good promiser. Nothing has been done to date. The policy of the police department is not to make raids unless called upon to do so. I think this clearly demonstrates that toleration is the accepted policy of our civic officials.

Regulation deals with the woman. It is an attempt to mitigate the ends of prostitution while at the same time tolerating its existence. Regulation once operated in Europe with its emphasis on Public Health. Under systems of regulation it has been attempted to confine prostitutes to licensed brothels whose inmates are examined by public officials. I might say that public opinion in Europe has become increasingly hostile to this practice. Where registration of these women existed, it was found that not more than 1 to 8 registered. Medical examination sounds safe and for that reason appeals to the layman. In the first place it is comparatively easy for a reputable physician to examine a man and say that he has, or has not got venereal disease—with women it is a most difficult task, taking much time and care to say that a woman has not got venereal disease. That time and care is never given by officials. Let us say for example that Madam X. submits to a weekly examination and to-day is found free from venereal disease, to-night she has connection with Mr. B. who has venereal disease. She is now in a position to pass it on to all comers on the strength of her medical certificate which she exhibits with much pride. She continues to infect others until her next examination, and as a rule does so for months. We have a form of medical examination here in Montreal. These are medical certificates taken from prostitutes in this city. The story of their medical examination as they told them to me, was laughable. Still worse, is this certificate given by a Montreal medical man on April 10th, to Miss Gaby. It reads that this is to certify that I have examined to-day the Bearer and have found her free from all symptoms of venereal disease. Signed, and from the same doctor to the same girl two days later this bill for $15.00 for giving one injection of 606, a treatment for syphilis. I wonder if this young woman showed this bill to her customers, as well the imitation bill of health.

You cannot get around this problem by medical examination. For a time all prostitutes gathered in in raids in Montreal had to produce a medical certificate when they came up for trial, but they soon found a way to beat that game. Two physicians in charge of the police department took charge of this task, and they did very fine work. The percentage of women diseased that these examina-

tions showed is appalling. 41 women were arrested for loitering on Windsor Street in the course of two hours one night, 38 of these women were diseased. Statistics show that 95 per cent. of women found in disorderly houses are diseased.

This system of medical examination received one very severe blow at the hands of a woman official who has since been dismissed by the city. In the course of her duties she developed the unfortunate habit of informing many women, before their cases were disposed of in the Court, the result of the medical examination. As a consequence, many women did not appear for their sentence, but sent other women to represent them. It is rumoured that she went direct to many houses and told the keepers in advance the result of these examinations. The keepers were only too pleased to appreciate her services. One keeper of a notorious resort in Cadiex Street the day before Christmas, purchased from her $1,500.00 worth of kimonas which she presented to the inmates of her house as a Christmas gift. Shortly after this became known to the city authorities she was dismissed. I hope I have buried that old argument of medical examination once and for all.

Segregation deals with the house. It is the policy of attempting to confine houses of prostitution to one or more localities, within which official action will not be taken provided the prescribed regulations are observed. It is the aggregation of debauchery for those addicted to prostitution. If segregation is a good policy for that why not segregate all the saloons in one district for those addicted to liquor?

It only advertises vice and most taxi drivers, cab drivers, and others find it a very convenient policy for their patrons. Segregation has corrupted police forces elsewhere. One incident that comes to my mind shows that Montreal is not entirely free from this corruption. There is a detective employed by the city now, who some time ago kept a car in a garage of this city and was known as its owner. The car actually belonged to the keeper of No. 61 City Hall Avenue. Her initials were on the door of it, and she was registered as the owner of the Automobile Bureau of Quebec. Here, again, is a strange coincidence—this detective was entered in the 'phone book as residing at No. 61 City Hall Avenue. Is it fair that we should favour segregation if by so doing we leave a poor innocent policeman or detective open to these temptations?

There is only one policy that is open to any decent thinking man and that is suppression of commercialized vice. I think we will all admit that what is ordinarily known as sexual immorality is almost

impossible to stop. The policy of permitting commercialized vice in a community has stimulated the illegal sale of liquor, increased crime and debaucheries, fostered sexual perversion and the so-called district is now the home of the drug addicts.

The person who suffers is the girl, not the madame who owns several houses and lives in style and comfort in the residential parts of the city. She drives in her limousine and shops at the best stores. Her general manager is the keeper and that most loathesome of all creatures, the pimp, supplies her with girls, off whom he lives. One seldom hears of the madame or the pimp being punished. It is always the unfortunate girl who is fined. The madame pays the fine and the girl peddles her wares twice as hard to pay it back. When the past administrative commission was making frequent raids it was not an uncommon sight to see 50 or so girls in the courts of a morning. There was always one citizen with PLENTY of money to bail them out. His business is selling cheap jewellery and clothes to the girls in these houses. It matters not whether they need them or not the madame decides they will have them, and at many times their actual value, she of course, getting her commission. If ever the public in this city wake up and stop this business, this poor chap will be in a bad way. Does the madame or the pimp look after these girls when they become so diseased that they are useless to them? Not much, they are then shipped into our hospitals and a new recruit is produced.

Not all these girls are in these houses by choice. Their own share of the profits is too small for that. I cannot help but feel that if a girl is leading an immoral life she should at least not be robbed in every direction and 75 per cent. of her earnings go to a pimp and a madame. I can assure you that the size of these receipts would astound you. This is the card obtained from a girl in a $3.00 house at 3 a.m. on a Sunday morning. There are 11 girls in this house and she had served 16 men, making her receipts $48.00 out of which she got $8.00, or 50 cents per visitor. The Chinaman who did her laundry charged her double the regular price. The ice-man, milkman, etc., all took their toll from the girls through the keeper. When this girl's week was up she was lucky if she didn't owe the madame money. These are not isolated secrets picked out to amaze you. They are all known to our civic officials and can be verified by any of you at any time you care to visit the district. The owners of real estate in the district will be very annoyed at me if as a result of this address good should come of it, for theirs is not such an unhappy lot.

It is not at all unusual for these houses to rent for $400.00 and $500.00 a month provided they are used for disorderly houses and $65.00 and $75.00 a month if used for three or four poor families. One has only got to make a move to enforce the law and close these places to find how well supplied the district and its parasites, are with money. The Committtee of Sixteen has tried, and believe me, we have found out.

It is a fact well known to the police and civic officials, that the red-light district of this city, owing to its segregated and tolerated nature, offers a harbour of refuge for crooks of all descriptions. Listen to one or two headings of press clippings, culled from hundreds that have appeared lately—"Stabbed 18 times yet lives." "Result of fight in disorderly house." "Assaulted, gagged and then robbed in house on City Hall Avenue." "Lured into house, beaten and robbed." Disorderly houses are hangouts and rendezvous for worst kind of criminals.

I have not touched yet on what is to me one of the most serious menaces of all. The appalling amount of venereal disease and its relation to commercialized vice. In the venereal disease clinic last year of the General Hospital alone, there were 31,850 visits made by men and women suffering from Gonorrhoea and Syphilis. By far the greatest percentage of these cases had their origin in disorderly houses. How could it be otherwise when we are told that 95 per cent. of prostitutes in disorderly houses are diseased, in spite of those pretty little certificates I have just shown you. Books have been written by eminent public health authorities in an attempt to bring home to you all the serious problem the world is facing from venereal disease and its results. Crowded asylums, unhappy homes, cripples, poverty, all tend to make this an economic problem that cannot much longer be handled with modesty or indifference. Let me cite one case that came to my attention to bear this out, for while it is a most serious one there are thousands like it. A man came to a city relief officer asking for relief because his rheumatism made him unable to work. He was sent to a hospital for examination, and was found to have syphilis not rheumatism, incidentally he had not contracted this from a seat in a public lavatory. The Social Worker attached to this clinic went to find out conditions of his family. She found first of all that his wife had syphilis contracted from him. There were seven children living. The eldest was blind and deaf. The next two children were both deaf and dumb. The fourth had a syphilitic bone condition, and was a cripple. The fifth was an idiot. The sixth was

mentally defective. The seventh was 12 months' old and gave a positive reaction for syphilis. In addition to this several children had died of syphilis, and there had been several miscarriages. This entire family was dependent on charity.

Our Provincial Government points with pride to its recently established venereal disease clinics. Last year in the neighborhood of $80,000.00 was spent on treating venereal disease cases in this province, the most of it in Montreal, and this on treating symptoms, but little was spent on removing the cause—the disorderly house. I will tell you frankly that as long as commercialized prostitution is permitted, as it is here, we can never cure them as fast as they are being infected by this pest hole.

The attitude of our courts and the manner in which the laws are administered in this city in connection with commercialized vice, is most annoying and at times amusing.

These cases are brought into the recorder's court which works through two agencies, the police and the recorder's. The police should make the cases, but their policy is to tolerate them and they make cases only when ordered to do so by the administration.

There are two recorders presiding over the recorder's court, and their jurisdiction is two-fold. The original object of having a recorder's court was to bring before it petty cases where the amount did not exceed $50.00, as well as cases for infraction of the municipal by-laws. But as a result of amendments to the Criminal Code they may now hear cases against disorderly houses. These two recorders could close up the red light district in this city in one month if they would only commit the keepers to jail, as is provided for in the law, but their policy is still one of fining.

Here is the result of a study made of 374 keepers tried in 1921:

281 were fined.
13 were sentenced to pay costs.
27 were discharged.
7 sentenced suspended.
18 defaulted.
28 were sent to prison.

These figures speak for themselves. The keepers who were fined were keepers of the most notorious dens in town.

The Committee of Sixteen realizing that these recorders were taking advantage of the option of a fine in the case of keepers, endeavored to have Federal and Provincial laws passed that would ultimately dispose of the proprietors and keepers of these houses, and with that object in view, the Federal Government adopted a bill

amending Sec. 781 of the Criminal Code. This amendment provides a jail sentence without the option of a fine for:

(*a*) A keeper convicted more than twice.

(*b*) A keeper convicted from an address with respect to which more than two convictions have been made.

Towards the end of 1920 the civic authorities determined to avail themselves of this amendment in their campaign against disorderly houses, and by the 1st of January, 1921, had obtained against most of the keepers in the red light district three new convictions. Early in 1921, some 9 or 10 cases were made, therefore, under this amendment, and brought before the Recorder's Court. But before a final decision could be obtained, an event occurred that precluded any possibility of their ever being heard. The facts are as follows: One of the most notorious women in this city, Flora Harris, had been sentenced to six month's imprisonment on each of five charges of keeping. Her attorneys immediately attempted to secure her release by way of a writ of certiorari brought before the Superior Court. The point upon which they chiefly relied concerned itself with jurisdiction. Ever since cases of keeping had been made by the police, they had invariably been heard by the Recorder's Court. Naturally, the proceedings in all these cases (i.e., the complaints, warrants, bailbonds, convictions, committals, etc.), showed conclusively that the Recorder's Court had heard and decided them. The Superior Court was now called upon to decide that the Recorder's Court had no jurisdiction in such cases, and that only the Recorders, and the Recorders alone, could take judicial cognizance of them. The certiorari in the Harris case was duly heard, and on February 16, 1921, the presiding judge rendered judgment, dismissing it with costs. The attorneys of Flora Harris now made another attempt to release her, and brought the matter of jurisdiction before the King's Bench by way of a habeaus corpus. Here they were more fortunate, for, during the month of March, 1921, this case was heard, and the presiding judge held that the Recorder's Court had no jurisdiction. Since Flora Harris had been tried by the Recorder's Court, and not by a Recorder sitting as a Recorder, he ordered her immediate discharge.

The results of these judgments were far-reaching. All cases pending against keepers had been lodged before the Recorder's Court, and, consequently, all previous convictions obtained against them became *ipso facto* null and void. In the same manner, and for the same reason, the 9 or 10 cases pending under the recent amendment to the Criminal Code had to be dropped. Moreover, three new

convictions were necessary, convictions made by the Recorders alone, before the new Act could be proceeded with.

Still determined to apply the amendment, the police began a series of raids with the aim of obtaining three proper convictions against keepers in the district. The first raid began on April 8, 1921, and by the end of the summer three new convictions had been registered against each disorderly house. At the beginning of September, 1921, the police began the fourth raid, and by October 7th, 1921, between 30 and 40 keepers had been arrested and charged under the amendment. One case was chosen as a test case, and was heard by both Recorders of the city of Montreal. On December 23rd, 1921, the Recorder gave judgment dismissing this case. Necessarily, all the other cases suffered the same fate. It is a long judgment, and is based on the following objections:

1st.—Substitution of name of accused for general description in information and warrant.

2nd.—Proof of previous conviction against premises.

3rd.—The information as laid is not in agreement with Part 16 of the Criminal Code or alternatively constitutes a new offence which removes it from under Sec. 774 of the Criminal Code.

Is it not unfortunate that such flimsy technicalities can obstruct the administration of laws, and it is also strange that while Montreal finds it is difficult to obtain a jail sentence for keepers, no other city in Canada is put to the same trouble.

Amongst the most guilty parties in this whole business are the proprietors, who, although notified when their houses are being used for purposes of commercialized vice, yet continue to defy the law. The Committee of Sixteen was successful in having passed at the 1920 session of the Provincial Legislature an "Injunction and Abatement Act." This law is directed against owners of property used for prostitution, and gives the courts the right to close them for a period of one year, against any use whatever.

A test case was commenced under this Act in April, 1920, against a notorious resort. On June 23rd, 1920, the interim injunction was granted. The case was heard on December 9th, 1920. The defendant had attacked the constitutionality of the Act, pretending that it was *ultra vires* of the powers of the Legislature. The Attorney-General of Quebec defended the right of the Province to pass such legislation.

On December 22nd, 1920, the presiding judge rendered judgment maintaining the action and the intervention, dismissed the plea and ordered the defendant's house closed for a period of one

year against its use for any purpose whatsoever. From this judgment the defendant entered an appeal to the Court of King's Bench. The appeal was heard in due course, and on December 20th, 1921, the judgment was handed down. This judgment maintained the intervention, but reversed the judgment of the Superior Court on the direct action, on the ground that the ownership of the house in question had not been established, and ordered its return to the lower court for such proof. By this judgment, maintaining an intervention, however, the Court of Appeals had confirmed the judgment of the Superior Court as to the constitutionality of the Act, and against it the defendant has not entered an appeal to the Supreme Court of Canada. Pending the hearing of this appeal, all further proceedings are suspended.

And this is the law that has been used in closing the red light districts in American cities. Montreal has to-day the only recognized red light district in North America. The Committee of Sixteen are not a body of prudes nor hypocrites. They do not pose as keepers of the peoples' morals, but are stimulated by a sense of decency and a desire to make this a more healthy city to live in. I am sorry to say that after four years' strenuous efforts nothing to date has been accomplished to better conditions here.

Public opinion must be aroused before the police can or will clean up a city. This public opinion must be strong enough to break down bribery, corruption, intrigue and intimidation.

Prevention of Tuberculosis in School Age

By Dr. J. H. Holbrook, Hamilton.

In presenting a paper on the prevention of tuberculosis in the pre-school age, I feel that we are coming down to the foundation of the tuberculosis problem. In looking up previous annual reports of the Canadian Association for the Prevention of Tuberculosis, I find that my name has been associated with the problem of tuberculosis in childhood, on two previous occasions. The first occasion was at London in 1911, when I read a paper on "Tuberculosis in Children," and the second was in 1916 at Quebec, when I read a paper on "Reasons Why Open Cases Should be Isolated," in which I tried to show that the main reason for isolating the adult was for the protection of the child.

Since 1916 we have had an opportunity to study the tuberculosis problem still more intensively in its relation to military service, for to date we have cared for one thousand three hundred and thirty six soldiers, and for pension purposes have had to put much more thought into the diagnosis of pulmonary disease than was required in pre-war days. The tuberculosis problem arising from the war has been a demonstration on a vast scale of the principle previously enunciated, but previously none too generally accepted, that adult tuberculosis is in the main a lighting up of a previously acquired infection which may have dated back to childhood and even to very early childhood, for all are agreed that very rarely had a soldier on active service in the great war the opportunity of acquiring a fresh infection. We realize as never before that factors due to military service which led to a lowering of resistance were responsible for a fresh lighting up, or an extension of a more or less thoroughly walled-off previous infection. We also realize that but for these factors which operated to bring about a lowering of resistance, many of these men would have been able to go through life without the lighting up of this disease, while for others military service through lowering of the resistance merely served to hasten the development of more active disease, while it is believable that where the duties of military service were not onerous, the regularity of camp life might have led to a more complete arrest of previous disease.

These are points about which there is at last very little controversy, and their importance lies in the fact that they have so clearly demonstrated the close relationship between adult disease and an infection which dates back sometimes to the school period of the individual and again oft times even to the pre-school period.

The experience of our own Hamilton Association with tuberculosis of children began very early in the history of the Association, for in 1908, when I became Superintendent of the Sanatorium, we had a boy and a girl as patients.

In 1909 the annual convention was held in Hamilton, and a paper was read by Dr. Wm. Chas. White, of Pittsburg, a native of Woodstock, of whom all Canadians are proud. In his address he described the work of the open-air school for tuberculous children at Pittsburg, and as a result of his advice, our Board in the following year erected a special department at the Sanatorium, expressly for tuberculous school children, and included in it an open-air school. I am not sure whether this school or the one established at Weston in the old building, later destroyed by fire, was the first open-air school in Canada, but the interesting thing about this building is the fact that we had no conception at that time of the importance or magnitude of the work for tuberculous school children. The building was planned to accommodate 20 children, but before it was completed more than 20 children were awaiting admission, and the future history of this building has been the addition from year to year of extensions to accommodate more beds, until now we have a building which accommodates 80 beds, but which lacks any definite plan of construction, except that of a badly arranged collection of units. The latest step has been the erection of a separate fireproof administration building containing two school rooms and a spacious dining room and other necessary rooms providing an up-to-date equipment.

I refer especially to this building because it illustrates so graphically our growing conception of the importance of the problem of tuberculosis in childhood.

Our accommodation is provided for children from the city schools, but we shall have taken another step in advance when we are ready to take it for granted that it is time to take up the problem of tuberculosis in the pre-school age. In considering this matter the first requisite is to satisfy ourselves that such a problem exists. As only one bit of evidence on this point, I wish to say that during the past year, Dr. Deadman, the Pathologist at our city hospital, has been sending me copies of all post mortems on patients

in which the finding of the autopsy was pulmonary tuberculosis. I do not know the figures have any definite bearing from the standpoint of percentage, but in four of the last eight autopsies the reports were on children under one year of age, and these had fairly generalized disease, the cause of which could not be definitely established before death. Knowing this, we can be perfectly sure that other cases of infants who died outside the hospital walls of so-called "marasmus" were really cases of tuberculosis, and that as Kellynack, of London, said, many years ago: "Undoubtedly much of the delicacy, invalidism, and so-called minor ailments of children are dependent on or connected with unsuspected, unrecognized or undefined tuberculous disease." My own view as to the relative severity of the symptoms resulting from infection in childhood, is best explained by repeating what I have said previously, namely:

"Now, if we consider the cases of childhood infection with tubercle-bacilli, it is evident that they may be divided into three classes. In the first class the young child receives a gross infection or repeated large infections before immunity is acquired, and succumbs to an acute form of the disease. In the second class the young child may receive a less serious infection and gradually develop a certain small amount of immunity, then to be reinfected, thus gradually having the infection extend though it neither proves fatal nor does the lung completely heal. In the third class, the exposure is of still slighter degree, and the child has time to develop an immunity that is sufficient to take care of a similar infection repeated at comparatively long intervals. Thus the latter case develops sufficient immunity to take care of all ordinary exposures to the disease when adult years are reached, and this would explain why our doctors or nurses or attendants do not contract the disease when so closely exposed to infections.

On this subject of tuberculosis in its relation to the young child nothing better to my mind has been given than Dr. Dobbie's paper read before this Association at its annual meeting in Ottawa in October of 1919. This paper was entitled, "What should be taught to-day about the Prevention of Tuberculosis," and I believe it should be part of the standard literature of this Association, and should be given wide publicity. In it he says:

"1. That a child at birth is free from tuberculosis, even if one or both parents should be tuberculous, either at the time of its conception or at the time of its birth.

"2. That the great majority of adults who have tuberculosis did not contract it in adult life, but were infected at some time in early childhood.

"3. That in children under three years of age the proportion infected is small, not because these infants are less susceptible, but because they are usually less exposed. At this age, however, infection more frequently results in disease, and disease in children under three years is more often fatal than in older children.

"4. That in children over three years the proportion of those infected gradually increases until at fifteen years it reaches about 90 per cent. After three years of age the type of disease is less severe; the period of sickness is usually more prolonged, but deaths are less frequent, although the number of cases is greater.

"These observed facts clearly teach us that the logical method of attack on tuberculosis is to prevent disease, resulting from infection in the young.

"The infant, from the moment of birth until three years of age, must be protected from infection by the tubercle-bacillus. In the home in which there is a tuberculous parent, drastic measures will be required. To compromise is but to invite disaster, with the assurance that the invitation will be accepted."

Undoubtedly the problem of the infant differs greatly from that of the child of the latter pre-school period. The infant is confined to the home and meets few people, but meets those few continuously. It is generally breast fed and the possibility that it may become infected is in very great degree dependent upon the older members in the home. If they are free from tuberculosis it will probably escape infection, but if any of them are open cases of tuberculosis, the infant will probably be repeatedly infected and probably will receive gross infections. Under these circumstances the child cannot yet have acquired an artificial immunity, and so the prospect of recovery is very slight. But, after the child, who has had no contacts in the home, learns to walk and begins to go about, then the possibility of an occasional slight infection arises, and if this can run its course and heal before a second infection is acquired the prospect of the acquirement of immunity sufficient to protect the young child becomes increasingly greater as time goes on. This I believe explains why it is that a child's chance of escaping a fatal disease gradually increases, and we know from long observation that the child that gets past the first five years of life is likely at any rate to go on to adolescence.

Now to make clear my idea of the requisites of prevention, I would first like to discuss briefly the matter of treatment of the child with active tuberculosis in the pre-school period. My conception of the principles of treatment of the adult is that the chief

measure upon which we rely is "Rest," and this the more absolute the better. To be sure, "Rest" is backed up by fresh air and nourishing food, and by other treatment to relieve distressing symptoms. In every case of the adult we depend upon two other things—*character* in the individual that he may have the intelligence and self-control sufficient to co-operate, and *resistance*, an intangible word, based to a slight degree upon an inherited quality, but chiefly upon that quality which is the result of a previous infection. Given these we trust to Nature, believing that she will do her work.

What of these two latter essentials has the child? Truly very little, and even "Rest," the chief measure, is almost impossible of application because of the inability of the child to understand the need of co-operation.

Our experience has led us to believe that the Sanatorium holds out no hope for a very young child that cannot be secured in a well regulated home, and that in either place little is to be gained by attempting to enforce a strict Rest regime, for this will be so irksome to the very young child that any benefit will be more than counterbalanced by its unhappiness due to the enforced restraint.

The only cases of infants or very young children, for whom hospital or sanatorium care is especially indicated are those who are acutely ill, or those who cannot get intelligent care in the home, and in any case the younger the child, the more unfavorable is the outlook. Then, if treatment holds out little encouragement, we are surely driven to measures of prevention as our only reliable hope.

Of the wisdom of adopting measures of prevention, no person can have any doubt, but it is only when we study the mortality curve that we realize that from 20 to 30 per cent. of all deaths of children is due to tuberculosis.

From what has been said, therefore, it must be apparent that the first and most important preventive measure must be the removal of every open case of tuberculosis from a home in which an infant is present. The neglect of this rule will almost invariably lead to very serious consequences, and is so likely to result in the early death of the child that failure to comply with the rule is to all intents and purpose a criminal offence, and should be so considered. Here is one of the greatest stumbling blocks in the anti-tuberculosis campaign to-day, for where the open case is the mother, it is almost impossible to induce her to leave her child. An intensive educational campaign on this point is needed, and the education should include that of the obstetrician or family physician, because it should be through him that the mother can be most easily influenced.

Only a few days ago, we had a young mother die of pulmonary tuberculosis after being with us only two months, she having nursed her infant for six months previously. On no other branch of the medical profession is the responsibility so great of knowing the actual condition of the patient with reference to pulmonary tuberculosis, both for the sake of the mother and of the child, and yet the obstetrician very seldom gives a passing thought to the condition of his patient's chest.

If the open case happens to be the father he should certainly be compelled to leave the home, if the infant remains in it, and if need be the mother should be assisted through the Mothers' Allowance or Pension Fund. But in the interest of humanity there is no excuse for granting a mothers' pension to a mother whose husband is a far advanced case of tuberculosis if he is allowed to remain in the home while any of his children are under five years of age. The purpose of the Mothers' Allowance is to give her children a chance to develop into good citizens, but assistance given where a father so tuberculous that he cannot support his family, remains in the home with young children, is practically going out of the way to prevent them from reaching adult years.

Another possible cause of the infection of young children at the age when they are much upon the floor may very well be the habit of the careless spitting of adults who have purulent sputum. In cities such sputum falling upon the pavement must become attached to boots, and it is quite probable that some of it is carried into the house to contaminate the carpets and floors. We realize the ubiquity of tuberculosis, and it is very frequently referred to as a house disease, but it almost seems to be too old fashioned to-day to urge that anti-spitting laws should be enforced. Surely it would be well worth while to start a new anti-spitting campaign with some such slogan as "Stop careless spitting, for the sake of little children."

On this point it may be well to point out that it is quite possible for a considerable percentage of open cases of tuberculosis to be unaware of the fact that they are infectious or even that they are tuberculosis. It is surprising how many cases among the soldiers have run no temperature, and had very little sputum for long periods of time, and yet had an extensive lesion with impairment of resonance and with moist sounds present after coughing and with X-ray and other evidence of previous active disease. Patients such as these on the occasion of an acute cold or other infection may have an increase of sputum which is then found to be positive for tubercle-bacilli. The only means of protecting against the danger of

cases of this sort will be the periodic examination of the chests of all the people, and even then some open cases would frequently be missed if the examiners did not do their work very thoroughly.

A little over a year ago we had a woman in her sixties die of pulmonary tuberculosis, whose chest showed a lesion of the right upper lung with cavitation and with deviation of the mediastinum to the right and from the general appearance we were of the opinion that her disease dated back very many years. Yet this woman had been the mother of seven children, five of whom predeceased her with tuberculosis. One of her daughters was a far advanced case of tuberculosis at Mountain Sanatorium when I first went there, and we had also treated two of her grandchildren. It is my opinion that this woman through her contact with her own children and grandchildren was probably the source of their trouble, and yet lived to a fairly advanced age.

Of other measures of prevention, one of the most important is that of providing a supply of pure milk. In this respect the present plans of the Federal Government to encourage the eradication of tuberculous cattle is to be most highly commended. While infection of children with bovine tubercle bacilli is of a milder nature, yet it accounts for 10 to 20 per cent. of all cases in children, and it is estimated that 5 per cent. of all deaths from tuberculosis in children under five years is caused by the bovine bacillus. Where milk cannot be secured from cattle that have been tested and found free from tuberculosis, the only safe course is to make sure that the milk is scientifically pasteurized. Such milk can be provided in any home, and if we but had the obstetrician, the pediatrist and the family physician keenly alive to their responsibility from the public health standpoint, they would see to it that the milk was invariably made safe for children.

Back of all this problem it becomes apparent that there is a constant need for education, education of the mothers, the physicians, the public generally, the taxpayers and the legislators. Unfortunately legislators will only go as far as public opinion demands, so education of the public becomes all the most important. But you cannot enforce upon a tuberculous mother or father the protection of their infant if you withhold from them the means with which to provide treatment. Neither can you segregate at the expense of the family any other member of the family who may be an open case if the father cannot afford to pay for treatment. Moreover, when you follow cause and effect back to their origin, you see clearly that the victim of tuberculosis infected in childhood and developing active disease in adult years is not as much to blame for his

disease as are the conditions under which he lives. So surely therefore as it is in the interest of the state to have her children grow up into healthy citizens, just so surely is it to the interest of the State to provide treatment to open cases of tuberculosis who are liable to be a menace to the children of the community.

In Ontario the acceptance of patients for free treatment is up to the conscience of the municipality. In cities where a volume of public opinion can be aroused, the indigent cases receive treatment fairly generally, but in the rural districts the municipality is the township or village, and the township or village will not tax itself to assist until the victim of tuberculosis has had all his self-respect driven out of him and he is ready to accept their so called "charity." It is not charity, but it is a part of the duty and the privilege of citizenship to take treatment for communicable disease.

In Ontario the health of the people of the rural districts rests with a decadent system that is very slowly being replaced by something more effectual, for modern public health organization is too hampered by the boundaries of the smaller municipalities. But just so soon as the health district becomes enlarged to a sufficiently large size to secure efficiency, and so soon as the people can be educated to vote sufficient money to protect themselves against preventable diseases, just so soon will they be in a position to buy a reasonable degree of protection against tuberculous infection, for in its final analysis the prevention of tuberculosis is a financial problem, and not till then can we hope to have any reasonable degree of prevention of tuberculosis in children of the pre-school age. This is the most susceptible period in the life of the individual and adequate measures of prevention applied here would bear rich fruit in citizenship two decades later when these children had become young adults. What is needed most is a quickened sense of responsibility on the part of the doctor, the obstetrician and the pediatrist to prevent disease and a definite effort on their part to educate the public to a realization of the vulnerability of the little child.

In conclusion, I would say that the tuberculosis problem in children of the pre-school age is chiefly a matter of prevention of infections, and especially of gross infections. This means the prevention of infection through food, but chiefly it means the prevention of contact with open cases of adult tuberculosis.

We are therefore back to the point that seems to be the keynote of this convention, namely, the extension of an efficient diagnostic or clinic service to all the people, urban and rural, of our country, and with this the education of the general practitioner and the people.

Sewage Treatment for Isolated Houses and Small Institutions where Municipal Sewage Is Not Available

By B. Evan Parry, M.R.A.I.C., *Supervising Architect.*

"Each is the proper guardian of his own health."—*John Stuart Mill.*

THE late Sir Edwin Chadwick, the eminent sanitarian, did not seek the causes of pestilence in the visitations of an offended Deity, but in the evil fruitage of the trangression of sanitary laws.

In proportion as knowledge spreads among the people, disease and incapacity declines.

During the last two or three generations attention has been increasingly directed in Canada to the problems involved in the suppression or abatement of preventable disease. That attention has not been restricted to professional sanitarians whether the public engineers or medical officers; but has been manifested in greater and greater earnestness by many men and women of cultured mind and public spirit. It would be difficult to exaggerate the value of the results which have already been attained; and it may suffice to mention such legislative enactments as those which relate to the registration and isolation of patients suffering from infectious diseases, the regulations as to child welfare, those for securing the purity of milk and other articles of food, as well as of drinking water, etc.

There is still, however, one source of preventable disease which is as insiduous as any other, and which has not yet received the practical attention that it requires. It is the treatment, as perfectly as can be accomplished, of our sewage in rural districts. Having this in mind and the many requests received from time to time from rural districts throughout the Dominion this treatise has been prepared.

The sanitary (cleanly) disposal of human excreta will prevent not only typhoid fever, but also the dysenteries, hookworm, tapeworm, and round worm diseases, much of the diarrhoeas of infant and adult life, and some of the tuberculosis.

If human filth is not properly disposed of it can be carried in various ways with whatever disease germs it may contain to human mouths. It can be carried by washing rains or by surface drainage into water supplies, fruit grounds, and yards of homes where children play; it can be carried, in some instances, for considerable distances by underground seepage into water supplies; it can be scattered about by the feet of persons and by poultry, dogs, cats, rats, and other animals; it can be carried by flies directly to foods for persons; and from time to time it will get on the hands of persons and thence can be carried into water or foods. Water contaminated with human filth, if used for washing milk vessels or other food containers, or if used for sprinkling or washing fruits or vegetables, may carry infection to the foods. Oysters and other shellfish, grown or stored in contaminated water, may convey infection. Flies, the nastiest of all insects, crawl over, feed on, and breed in human filth. From collections of filth to which they have had access or in which they have bred they carry matter, with whatever infection it may contain, both within and on the surface of their bodies and smear the filth from their feet and bowels on everything they touch. Fingers very slightly but not noticeably soiled with excreta from a typhoid fever patient or from a typhoid carrier may carry infection directly to human mouths or to food or drink destined for human mouths.

On vegetables, such as lettuce, radishes and celery sprinkled with infected water, typhoid germs may remain alive for many days.

Experimentally, it has been found that butter made from infected cream may retain living typhoid germs for a considerable time.

Warm milk fresh from the cow, before cooling, is a favourable culture medium and conveyor for typhoid germs and it is therefore important to exercise precautions in handling milk so that nothing soiled to the slightest extent with human excreta will get into the milk or into the milk vessels. A finger or fly soiled with infected excreta may introduce into a can of milk at a dairy farm, the seeds of infection for an extensive epidemic of typhoid fever.

It is necessary to the health of everyone that the waste products of the body should be eliminated regularly and promptly. It is but reasonable to suppose that the calls of nature will meet with a more prompt and regular response when the conveniences provided are comfortable and free from disagreeable features than when a draughty, cold, *ill-smelling privy must be used.* For this

reason alone it is to the interest of every community of any considerable size to install a proper sewerage system; and to insist that every house be connected therewith.

Probably no epidemic in this continent's history better illustrates the dire results that may follow one thoughtless act than the outbreak of typhoid fever at Plymouth, Pa., in 1885. In January and February of that year the night discharges of one typhoid fever patient were thrown out upon the snow near his home. These, carried by spring thaws into the public water supply, caused an epidemic running from April to September. In a total population of about 8,000, 1.104 persons were attacked by the disease and 114 died.

Upon thousands of small homesteads there are no privies and excretions are deposited carelessly about the premises.

Upon thousands of other homesteads and railway stations the privy is so filthy and neglected that hired men and visitors seek near-by sheds, fields, and woods.

They Should be Abolished.

Modern sanitation has been recognized as a necessity and insisted upon by law in the villages, towns and cities of the Dominion and is coming to be accepted as a necessary convenience in rural communities. Where it is necessary to have a sewage plant constructed to care for large groups of people, expert assistance should be obtained and advice should not be attempted by persons not familiar with the subject. The expenditure involved on a system which will not operate properly and, incidentally, which will become a nuisance as well as a menace to health is worse than wasted and the saving of the small fee charged by a competent consulting engineer is in no sense justified.

Where soil and area are suited subsurface disposal methods are applicable to populations as large as two hundred persons. However as larger and more continuous and dangerous sewage flows are encountered the wisdom of using high-grade treatment works with stone, sand filters, activated sludge and chlorination, for the biologic redemption of tank effluents becomes more pronounced and the whole matter should be handled by one experienced in the field of sewage treatment.

Sewage is unsightly and contains a large amount of highly putrescible matter which when exposed to the air, rapidly decomposes with the added objection of giving off foul odours. A desire,

therefore, is created to remove it from the range of vision and smell as rapidly and effectively as possible. In addition to this highly putrescible matter, sewage also contains bacteria, microscopical plant growths, which may or which may not be injurious to health. For the most part the germs of disease are found in the waste products, the discharges from the body and in the bodies themselves of men and animals.

It is consequently necessary to treat these wastes in such a way that there can be no danger of the germs getting back into the body again and thus causing disease.

The proper treatment of excreta is of the greatest importance and every effort should be made at all times to see that human excreta is so disposed of as not to be a menace to health. In what way is there danger? Why are we so insistent that special care should be given? The great danger is either on account of the liability to contaminate water supplies or the accessibility of this to faecal material. If the first occurs, epidemics of water-borne diseases, such as typhoid and cholera may take place. If the second occurs there is the danger of this directly conveying the germs of disease from the excreta to the food. How then should excreta be treated?

The general rules regarding the treatment of sewage which should be observed by all can be laid down as follows:—

(1) Avoidance of creating a nuisance.

(2) Water supply used for drinking purposes should be protected from contamination.

Generally speaking the first of the above rules is observed throughout the Dominion, although numerous instances of its violation have been observed. In the case of the second rule, unfortunately as much cannot be said and the results of this carelessness, more than through the want of knowledge, is that the one who contributes the sewage does not suffer, but some one else does.

Water is an excellent agency for transportation of all filth thrown on to the surface of the ground or even if buried. Depending upon the porosity of the soil, rain water may carry filth and bacteria to very considerable distances and varying in depth, *e.g.* in gravelly, chalky soils or in limestone. If the soil be of clay water will be unable to penetrate it—hence wells driven in such solis are, with exceptions to be noted in a further brochure published by the Department of Health, to be regarded as safe from contamination.

But even in light porous soils, contamination by filth may be avoided by taking the proper steps to dispose of sewage or filth, or as in the case of already polluted sources of supply treating the water either chemically or by filtration through sand filters. It becomes, therefore, a very difficult and expensive matter to remove or render harmless the bacteria in a water which has been contaminated by sewage. All we can hope to do, aside from preventing a nuisance, is to reduce the number of bacteria present and discharge the water into a water course or into the ground where it cannot immediately get into a water supply.

Disinfection is the destruction of disease germs. Sterilization is the destruction of all germs, both the harmful and the useful. Antisepsis is the checking and restraining of bacterial growth. Deodorization is the destruction of odor. Unfortunately in practice none of these processes may be complete. The agent may be of inferior quality, may have lost its potency, or may not reach all parts of the mass treated. A disinfectant or germicide is an agent capable of destroying disease germs; an antispetic is an agent merely capable of arresting bacterial growth, and it may be a dilute disinfectant; a deodorant is an agent that tends to destroy odor, but whose action may consist in absorbing odor or on masking the original odor with another more agreeable one.

(To be continued.)

Department of Public Health, City of Toronto

THE following tables are part of a statistical study of the deaths occurring amongst infants under one year of age, during the four months, June, July, August and September, 1922, in Toronto.

TABLE A.

Cause of Death—	
Acute Communicable Diseases	5
Tuberculosis	1
Venereal Diseases	2
Respiratory	19
Intestinal	45
Premature Births	75
Congenital Debility and Malformations	64
Other early infancy	38
Other	23
	272

TABLE B.

Ages of Death—	
Under 1 week	110
1 week to 1 month	42
1 month to 3 months	23
3 months to 6 months	47
6 months to 12 months	50
	272

This shows that the number of children dying under one month is over half the total deaths of the first year.

TABLE C.

Breast feeding—Infants living over one month		102
Breast fed through life	19	
Not breast fed or partially breast fed	83	

Only infants surviving the first month are here considered, as deaths during the first month are seldom due to feeding.

The figures prove again the fact that the breast fed infant has a great advantage over the artificially fed.

Social Background

The Church as a Social Agency

C.—The Church as an Educational and Inspirational Force Behind Social Movements.

F. N. Stapleford, M.A.

THIS is a function of the church which would be accepted practically without question by all. If the church does not inspire and energize leaders in movements of social betterment in the widest sense it would be a little difficult to know just what the function of the church was. As a matter of fact it is actually doing this work. It would be a conservative estimate to say that in the City of Toronto nine-tenths of those doing welfare work, either in a professional or voluntary capacity, are men and women closely linked up to the church, and as far as can be judged, have been led to this work through the religious motive. While the same percentage would not hold true in other communities it is true that whenever there is a sound religious life, the social effort of that community has a vitality and breadth which otherwise would be lacking. Religion leads to social service in natural and inevitable sequence. Missionary effort is a social movement on a national scale and draws its support, from the social idealism of the church constituency.

But while this acknowledgement is made it does not follow that the churches are doing all that they might do in this regard. Leaving aside the Sunday School and other avenues of social education and inspiration, we shall here think only of the relation of the pulpit thereto. In any discussion of this kind there should be a clear recognition of the tremendous difficulties which surround the work of the preacher at the present time. Any criticism to be worth anything must bear this in mind.

A rather spirited discussion took place recently in Toronto as to whether the preacher should confine his attention purely to theology or also into a discussion on economic questions. It is impossible here to go into that discussion in any detail, and it was a little difficult to know from the newspaper accounts, just what

was meant by the various terms used. No one would deny, however, that the pulpit has a duty in regard to moral issues and how it is possible to discuss a moral issue without straying into the realm of economics, it is difficult to see. They are two aspects of the one set of facts. Practically every economic fact has its moral bearings. A Methodist has been taught to look upon the liquor problem as preeminently a moral question, although the liquor traffic is, from one viewpoint, simply a part of the economic system. Prostitution has its economic as well as its moral side. The high cost of living is very directly an economic question, but it also sets a problem in the moral realm, unless one were willing to adopt the view that the starvation of children had no ethical significance.

Economics has as its field the comparative efficiency of various methods in use for the production and distribution of wealth. Wealth, however, has no significance apart from its contribution to welfare. Wealth is a means to an end and welfare is the end itself. All industrial processes and types of organization are ultimately valuable only as they contribute to this end. If they have dangerous by-products, inimical to human welfare they are to that extent defeating their real purpose. The controlling factor in all this is the human value. And it is here that what is most significant in the moral field, is being worked out. Ethics was becoming a very barren subject—a worked-out mine—until it began to view its theories in the light of the great mass of social facts recently brought forward. Sociology is simply the modern form of the ancient quest of ethics for standards for rightness of action.

It is surely then the preachers' part to discern and interpret the moral issues in the economic movements and problems of the time. A moral code perfectly satisfactory to a past generation cannot possibly be adequate to the needs of a new generation almost stunned by the multiplicity of new problems, each clamoring for ethical interpretation. The question, "Is it right," is much more fundamental than, "Does it pay?" Our preacher then, if this is admitted, will have to concern himself with those matters which are now seen as vital elements in a complex which refuses to dissolve itself into separate departments.

There is a large body of fact easily ascertainable, about conditions of life and labour to-day and the relation between these facts and human welfare may also be established. If the preacher surrenders this great fruitful field and contents himself with the well-worn moral maxims of a past age, he very definitely and completely surrenders his claim to moral leadership.

One of the great dangers of the preacher lies in abstractness. He may believe that it is his duty to simply enunciate the great principles of brotherhood, service and sacrifice and leave to his congregation the application. This is a very common viewpoint, especially among those who occupy the pulpits of the larger churches. This viewpoint is vitiated by two errors. In the first place very few people are able to think abstractly enough to carry over this application. It is simply not made. If the preacher would carry on a Socratic dialogue with some of his laymen, he would find that the ideas contained in his sermons co-exist in their minds very readily with other ideas which are their complete denial, unless the contradiction is clearly pointed out. Then, again, terms of brotherhood and service, have not the slightest meaning unless concretely illustrated. Redness is simply a nothing unless you have seen red things, and the term brotherhood is equally a vacuum unless illustrated by brotherly acts and a brotherly order of social life.

The church gives an over emphasis to the viewpoint of the business man without taking sufficient account of his obvious limitations. There is scarcely any class in the community which more clearly needs education and enlightenment than the average business man. His vision is rigidly limited and he needs not alone the enunciation of abstract principles, (for his whole training has taught him to think concretely), but the definite application of those principles. If this statement is doubted it is strongly recommended that the doubter should read with some care the record of the recent cross-examination of Henry Ford on the witness stand. If the preacher imagines then, that his hearers are taking a set of abstract principles and making those subtle adjustments and applications which are needed, if we are to have a more wholesome social order, that preacher is only deceiving himself. A path has to be blazed through the thickets.

An idealism then, divorced from this content which it may get from its application to modern problems, has no moral dynamic. It is a cloud land, whose unreal beauty mocks the modern seeker after the city of God. It is as if one were on a lake looking about in the moonlight on a mist shrouded landscape. There is a weird and almost unearthly beauty about it all, but no sharpness of outline, nothing upon which one can measure distance. As some one has said, "A new generation cannot be fed by the sweet old idealism which like old jam is covered with mold." If this nebulous type of teaching, this unconscious kind of Christian Science, were squeezed out and something definite, tangible and concrete were

substituted there would be fewer of that type of sermon which reminds one of the story of the creation, "without form and void and darkness covered the face of the deep."

If the churches of Canada had adopted this viewpoint in regard to the Prohibition issue what would have been the result? If it has contented itself with enunciating the general principle of temperance and self-restraint, leaving it to the consciences of the hearers to interpret does any sane man believe that the wonderful progress which has come about, would have been possible. Prohibition has become a practical issue because the church got directly into the dust and heat of the fray and spoke its mind with great explicitness. If this problem were treated in that elevated detached way in which some preachers wish to treat other social problems, the saloons would still be open throughout Canada and there would be no present hope of closing them up. The abstract method is prompted by the wish to attain the desired goal without hurting anyone's feelings, a new method of trying to make an omelet without breaking any egg. The difficulties in this attempt are sufficiently obvious.

A new sense of sin is needed and the consciousness of sin awakened in regard to matters which now to many men have no ethical contents. There are men who would regard it as a sin to play cards or go to a theatre, but who do not think of making any moral judgments in regard to industrial factors which have a thousand timse more influence upon human welfare.

"The Russians tell a story of a robber who killed a peasant on the open road and went home quite contentedly counting the money of his victim. But in the bag of the dead, he found a piece of smoked beef and ate it and after that his conscience ached terribly because you see, it was Lent." (Quoted in an article appearing in a recent issue of The Nation.)

The preacher then must avoid the lure of the abstract term. He must speak concretely. It is no part of his duty to adopt some sweeping generalization or social theory, such as single tax or socialism and then proceed to cram this down his hearers' throats, in season and out of season. It is necessary, however, to have a certain knowledge of social fact, and of the effects upon human life, so that when he uses the great moral terms of Christianity he will be able to so illustrate them from modern life that they will become watch cries of a new era.

Illustrations from literature and history have their place but

cannot expect a tenth of the power of an illustration which is charged with some part of the rich life of to-day.

The need is for men whose eyes are quick to see those numberless ways in which brotherhood is exemplifying itself. Denunciation of wrong is necessary, but there is a larger place for the type of preaching, which is full of illustrations of how the spirit of God in the modern man is exemplifying itself, in a thousand new experiments in social welfare and brotherhood. The Christian message is an essential optimism, but pessimism is better than a shallow optimism, founded rather on a personal sense of well-being than on a well-considered knowledge of the conditions and tendencies of present life.

The process of adaptation is going forward. To use a rather cant phrase the church is rapidly becoming socialized. As the report on "The Church and Reconstruction" puts it, (issued by the Federal Council of the Churches of Christ in America). "The church itself has undergone, within the last decade, and especially during the war, an enlargement of scope which amounts to a transformation. The churches to-day recognize, as they did not a generation ago, that the Kingdom of God is as comprehensive as human life, with all of its interests and needs, and that they share in a common responsibility for a Christian world order. They are convinced that the world is the subject of redemption; that the ethical principles of the Gospels are to be applied to industry and to the relations of nations; that the church is to devote itself henceforth assiduously to these purposes along with the individual ministries of religion."

The man who says the world is getting worse is talking nonsense. Tremendous strides are being made in every respect of human progress. But the essence of the situation lies, not in these achievements, but in the new paths being opened up, making possible, hitherto undreamed of advances in the future. It is not a restful age, but it certainly is a mentally exhilarating age in which to live, and that preacher must indeed be alert and wide-visioned who hopes to-day to don the prophetic mantle. Ministers in Canada are second to none in devotion and adaptability to new conditions. It is a confident prediction therefore, that they will make a worthy contribution to this new world which is unfolding.

News Notes

A typhoid epidemic has broken out in Alliston, Ontario, and surrounding district. The first case was reported early in December and since then twenty cases have been reported, with one death. Officials of the Provincial Board of Health immediately made an investigation as to the source of the trouble, and the water and milk supply was inquired into. An examination was made of all persons employed at the dairy farms supplying milk to the town, but no patients or carriers were found. The water supply was examined, and the wells and reservoir showed no contamination. It was, however, found that the tap water in the houses contained colon bacilli in amounts ordinarily considered dangerous to health. Further investigation is being carried on to try and definitely locate the sources of the contamination. Meanwhile an emergency apparatus for chlorinating the water has been installed and the townspeople are warned to boil all water for drinking purposes.

Dr. J. W. S. McCullough, Chief Officer of Health for Ontario, and Mr. F. A. Dallyn, C.E., Provincial Sanitary Engineer for the Ontario Provincial Board of Health, attended the Conference in Washington, D.C., during the week of January 1st, to consider means for the efficient inspection of water supply on boats and trains.

Through the initiative of the Canadian Tuberculosis Association and the co-operation of the Canadian Red Cross Society, a Health Survey will be held in some section of the Province of Ontario during the present year. The district has not yet been decided on, but it will probably be in the neighborhood of Hamilton. The Provincial Board of Health and the Ontario Department of Education will co-operate in this survey.

Dr. R. W. Bell, of the Ontario Provincial Board of Health, has been ill for the past two or three weeks and is still confined to his bed.

The Provinces of British Columbia and Ontario have formed the necessary committees to proceed with the survey of children of preschool and school age, in a limited area in each of the Provinces, and to establish the incidence of tuberculosis. The Hon. Dr. Young is president, and Professor Mullin secretary of the British Columbia Committee, and Dr. Jabez Elliott is president, and Dr. Roy McClennahan is secretary of the Ontario Committee. Similar arrangements are under way in the Provinces of Quebec, Nova Scotia and New Brunswick.

The Canadian Tuberculosis Association is paying to each Provincial Committee $1,000.00 of the money it received this year from the Canadian Red Cross Society. The Provincial Red Cross of Ontario is contributing $2,500.00 to the Ontario Committee, and similar co-operation is anticipated from the Provincial Red Cross Societies of British Columbia and Nova Scotia. The additional monies and personnel required for completing the undertaking are to be found in each Province by the respective Provincial Survey Committee.

A Social Hygiene Council has recently been formed in St. Catharines, Ontario, embracing the County of Lincoln. Such action followed addresses by Mrs. Pankhurst and Dr. Gordon Bates on behalf of the Canadian Social Hygiene Council. The successful organization of this new Social Hygiene Council has been largely made possible by the energy and enthusiasm of Dr. D. V. Currey, the very capable Medical Officer of Health of St. Catharines.

The Secretary of the Canadian Tuberculosis Association attended the annual meeting of the Hamilton Health Association January 16th, and addressed meetings in Chatham and Brantford the two following days.

Mrs. Pankhurst, Dr. Gordon Bates and Dr. J. J. Heagerty have proceeded to New Brunswick to address meetings on behalf of the Canadian Social Hygiene Council. Public meetings have already been arranged for Moncton, Bathurst, Campbelltown, Edmunston, Woodstock, St. Stephen, Fredericton, Chatham, Sackville, Sussex, McAdam and St. John.

It is desired to bespeak the co-operation and assistance of every one in filling out the questionaires, recently circulated, to gather the necessary information to compile the new directory of Canadian agencies for the diagnosis and treatment of Tuberculosis. Any suggestions or information contributed will be very gratefully appreciated by the office of the Canadian Tuberculosis Association, Bank Street Chambers, Ottawa, Ontario.

Owing to the necessity of including Dr. Haywood's address to the Canadian Club, Montreal, the second part of Mrs. Kensit's report to the Social Hygiene Council has been held over until the February number.

Criticism of the City Council for its attitude towards the charges made by Dr. A. K. Haywood concerning commercialized vice was apparent in a resolution passed by some four hundred members of the Federation of Women's Clubs of Montreal at a meeting held in the Mount Royal Hotel. The resolution, which is to be submitted to the City Council, read:

"Whereas the Council of the City of Montreal is charged with the preservation of law, order and health in the municipality, the effective performance of which duties is of vital and primary importance to the welfare of the whole community; and whereas the annual reports of the Committee of Sixteen have continually shown that commercialized vice, particularly in the maintenance of houses of prostitution and the recognition of a Red Light District, exists; also that the authorities have failed to suppress or even diminish this evil, the existence of which is so terrible a curse to the community; all of which is so forcibly exposed in the address given by Dr. Haywood before the Canadian Club.

"Be it resolved, that while the Federation of Women's Clubs refrains from any indictment as to connivance in violation of the law, or laxity in the discharge or punishment of offenders, it does appear that the question is apathetically regarded and does not receive the active and earnest consideration by the Council that its gravity demands, in view of the terrible menace its existence is to the well-being of the people. This Federation of Women's Clubs would, therefore, most earnestly urge upon your honourable body to thoroughly investigate the whole situation for the purpose of taking such measures as shall lead to the suppression of public prostitution."

ONTARIO

The Provincial Board of Health of Ontario

COMMUNICABLE DISEASES REPORTED FOR THE PROVINCE FOR THE MONTH OF DECEMBER, 1922.

COMPARATIVE TABLE.

	1922		1921	
	Cases.	Deaths.	Cases.	Deaths.
Small-pox	51	1	128	0
Scarlet Fever	449	14	600	16
Diphtheria	315	40	743	60
Measles	359	1	94	2
Whooping Cough	234	8	95	9
Typhoid	54	17	28	5
Tuberculosis	196	122	174	139
Infantile Paralysis	4	1	1	0
Cerebro-Spinal Meningitis.	6	6	5	3
Influenzal Pneumonia	.....	18	.....	4
Primary Pneumonia	.....	282	.....	215
Syphilis	133	.....	183	.....
Gonorrhoea	179	.....	230	.....
Chancroid	3	.....	5	.....

The outstanding feature of communicable diseases reported for the Province for the month of December is the marked decrease in small-pox, scarlet fever, and diphtheria compared with December, 1921.

The reduction in small-pox cases is 77, scarlet fever cases 151, and in diphtheria 428 cases. On the other hand, the returns made of measles, whooping cough and typhoid show these diseases to be more prevalent than in the corresponding month of 1921, as may be seen in the comparative table.

CASES AND DEATHS OF COMMUNICABLE DISEASES REPORTED BY LOCAL BOARDS OF HEALTH FOR THE YEAR 1922.

Comparative Table.

	1922		1921	
	Cases.	Deaths.	Cases.	Deaths.
Small-pox	977	3	3,787	18
Scarlet Fever	3,950	111	4,564	126
Diphtheria	3,529	341	6,313	525
Measles	8,950	40	2,851	40
Whooping Cough	1,691	90	2,357	131
Typhoid	567	127	725	184
*Tuberculosis	2,078	1,442	2,286	1,500
Infantile Paralysis	205	25	81	20
Cerebro-Spinal Meningitis.	71	64	79	66
Influenzal Pneumonia	.....	375	.....	159
Primary Pneumonia	.....	2,559	.....	2,325
Syphilis	2,136	.....	2,477	.....
Gonorrhoea	2,270	.....	2,554	.....
Chancroid	39	.....	61	.....

*Only 75% of deaths reported.

Current Literature Dealing with Venereal Diseases

These Abstracts are Available Through the Courtesy of the American Social Hygiene Association.

Treatment of Syphilis Among the Insane... By Thomas B. Christian. The *American Journal of the Medical Sciences...* Vol. clxiv, No. 4, October, 1922.

Dr. Christian gives a thorough review of the method of treatment of syphilis among the insane at the State Hospital at Morris Plains, New Jersey, citing a number of cases. Although many cases coming to this hospital are recognized too late for curative treatment, they are treated to check onward progress of the disease. He believes that if more examinations of the spinal fluid were made in general hospitals and private practice, many cases would probably never reach institutions for the insane. (With this thought should go the importance of intensive treatment of early cases of infection. —Editor.) The activity of a syphilitic process in the central nervous system is shown earlier, more accurately, and a number of times only by pathological changes in the spinal fluid, and the activity of syphilis of the nervous system is indicated by the globulin test, cell count, Wassermann and colloidal gold reactions, long before mental symptoms or physical signs are present. Spinal fluid examinations would discover many slow progressing cases of neurosyphilis, and should be used more frequently.

In summarizing, the author says in part:

Our results obtained from treating the syphilitic insane have more than compensated for the time and expense, and it is our plan to continue treatments.

It is a matter of individual opinion whether cases of general paralysis confined in institutions for the insane should or should not be treated. We have found no results obtained in such cases.

Every case in or out of an institution should have a spinal fluid examination if the blood is positive.

Among 1,500 cases examined for syphilis 12.5 per cent. showed positive Wassermanns, and from this number of positive cases 26.2 per cent. showed signs of neurosyphilis; 17.6 per cent. being cases of general paralysis, and 8.6 per cent. other forms of neurosphyilis.

It is to be remembered that the above examinations shows the results from latent syphilis, as no case recorded in the above shows clinical signs of syphilis excepting the cases of paresis, and they, of course, belong in the tertiary stage as neurosyphilis.

In conclusion, I wish to emphasize the tremendous importance of the early discovery and proper treatment of syphilis and the examination of the spinal fluids, and thus to lessen the number of incurable latent syphilitics and neurosyphilitics.

The Relation of Syphilis to Diagnosis and Surgery. By Albert M. Crance. *New York State Journal of Medicine.* Vol. 22, No. 8. August, 1922.

There are three important factors in the diagnosis of syphilis, a carefully taken history, the physical findings, and the blood, spinal fluid, Wassermann, or both. The Wassermann test is taken by the author to include provocative tests also. In the physical examination the physician should watch for the following conditions: areas of alopecia; a slight external strabismus; ptosis of the upper lid; the reaction of the pupils to light; whitish contracted areas in the throat or scars of previous mucous patches; the teeth, especially in congenital syphilis. In the chest, if a heart lesion is found, the blood pressure on either side should be compared. A variation of 20 m.m. or more of mercury, in the two arms, is suggestive of aortic aneurysm. The roentgenologist's findings can verify such a condition. The abdominal examination reveals little except the enlargement of the liver, which is often due to syphilis. If the patellar reflexes are at all diminished or absent, they should be studied further. The skin should be observed for lesions or scars. A very obscure yet important sign is the enlargement of the epitrochlear glands. Roughening of the tibia, although suggestive, is present in so many normal individuals, that it seems better to disregard it.

Many cases of obscure syphilis present no external signs. All chronic cases presenting abdominal symptoms such as those referable to the stomach, duodenum, gall bladder, appendix, etc., should be thoroughly studied and Wassermann tests taken before medical or surgical treatment is suggested. It has been demonstrated after autopsy that spirocheta pallida are present in such tissues as the heart muscle, the aorta, the liver, and in certain ulcers of the stomach.

The author cites six illustrative cases of obscure syphilis.

The causes of arthritis, says Thomas McCrae Magee, Professor of Practice of Medicine at Jefferson Medical College, Philadelphia,

in an address before the Kings County Medical Society, can be divided into two great groups: the metabolic and the infectious. The metabolic arthritides are not common, and we have such underlying conditions as serum reactions (anaphylaxis), hemophilia, and the so-called Charcot joint (a metabolic disturbance of syphilitic (?) origin). The cases of arthritis most commonly met with are those caused by infection, and we find cases of acute joint involvment frequently in scarlet fever, pneumonia, tonsilitis, gonorrhoea and other diseases. Gonorrhoeal arthritis is a very common joint infection, and contrary to popular teaching it is never non-articular at the onset. The speaker stressed the point of single joint involvement in gonorrhoeal arthritis and indicated that a careful history will almost always show the fact that in the beginning more than a single joint was involved. When cases are seen, however, by the medical man, they are usually acute or subacute, and the infection has usually attacked one joint more severely than the others, and due to the localization of the infection in one joint, the slight involvement of others is overlooked. This, no doubt, accounts for the popular fallacy being taught to medical students, and used by physicians as a point in differential diagnosis. The correct diagnosis of affections involving joints depends upon a well-taken anamnesis, and a systematic correlation of etiological, symptomatical, anatomical and pathological findings. The chronic joint condition falls into the hands of the surgeon, the acute is seen by the general practitioner.

The speaker impressed upon his audience the advisability of dropping the use of the term "rheumatism." To one physician rheumatism means acute articular rheumatism, to another, acute rheumatic fever, and to a third, any ache or pain found in any part of the body.

Notes on Current Literature

From the Health Information Service, Canadian Red Cross Society:

Ventilation.

The January number of the *Journal of the Outdoor Life"* contains a symposium on ventilation, including the following articles:

(*a*) Air from the Standpoint of Physiology.
(*b*) Atmospheric Conditions and Respiratory Disease.
(*c*) Heat Loss from the Human Body.
(*d*) The Ventilation of the School room.

Symposium on Dental Hygiene.

The Journal of State Medicine for November, 1922, contains the following articles on dental hygiene:

(*a*) The Building of Good Teeth.
(*b*) The Prevention of Dental Caries and Oral Sepsis.
(*c*) The Causes and Effects of Irregular Teeth.

Maternal Mortality.

Effective Methods of Reducing Maternal Mortality. By Dr. R. A. Bolt, American Child Hygiene Association. *Health News,* November, 1922, page 247.

Maternity Clinics.

The organization and function of a maternity clinic as described by Dr. G. E. Oates in a lecture delivered at the Royal Institute of Public Health. *Maternity and Child Welfare,* Dec., 1922, p. 379.

Industrial Welfare.

A description of the measures to safeguard the health of adolescent workers at Cadbury Bros. plant in Bournville, England. *The Child,* Dec., 1922, p. 71

Hospital Social Service.

Recent developments in hospital social service. By N. Florence Cummings, R.N., Managing Editor, Hospital Social Service, New York.... *The Public Health Nurse,* Dec., 1922, p. 643.

Infant Feeding and Infant Mortality.

The relation of breast and artificial feeding and infant mortality. By Dr. R. N. Woodbury, of the U. S. Children's Bureau. *The American Journal of Hygiene,* Nov., 1922, p. 668.

Nutrition Classes for Children.

A year's experience of nutrition classes in Detroit shows a minor influence on weight of school children, but a marked improvement in their health and dietary habits. *City Health,* Nov., 1922, p. 3.

Rural Child Welfare.

Bulletin No. 107, issued by the U. S. Children's Bureau on county organization for child care and protection.

The Growth of Children.

A study of the growth of different types of children with special reference to height, weight and breathing capacity. By Dr. B. T. Baldwin, of the University of Iowa. *Journal of the Outdoor Life,* Dec., 1922, p. 405.

Health Work in Schools.

An address by Dr. W. A. Howe, State Medical Inspector of Schools, Albany. *The Nationa's Health,* Nov., 1922, p. 697.

The Cause of Tuberculosis.

The cause of tuberculosis in its modern aspects. Br. Dr. E. R. Baldwin, of the Trudeau Foundation, Saranac Lake, N.Y. *New York Tuberculosis Association Bulletin,* Nov.-Dec., 1922, p. 1.

The Prevention of Infection.

A popular description of the way infection spreads and the best methods of prevention. *The Health Builder,* Jan., 1923, p. 207.

Editorial

Vice in Montreal

Dr. Haywood's address to the Montreal Canadian Club on "Vice and Drugs in Montreal," included in the present issue, is a document which will repay the perusal of every Canadian who cares for the welfare of his country. Country really should mean and does mean in the minds of right thinking people not the trees and the stones and the rivers, but the human beings who are given life that they may achieve the mental and physical ideals that nature intended. One would gather from Dr. Haywood's address that men and women have sunk to the lowest depths of degradation and disease, not in hundreds, but in thousands, that they may fill the purses of ruffianly exploiters and gratify the self-satisfied opinion of smug stand-patters who have preached toleration and segregation in spite of the fact that such a policy has spelled not only the destruction of virtue, but loathsome infection and death for thousands.

The main facts in reference to organized vice as outlined in Dr. Haywood's courageous statement have been known for years to many, in all parts of the country. Patriotic citizens have struggled to bring the facts to public attention, but in spite of everything an obstinate and influential few have persisted in concealing the situation from the public and blocking any action which tended to right a condition of affairs which has been a disgrace to the whole country.

The campaign against Venereal Diseases conducted in Montreal and other parts of Quebec has been waged very efficiently by a capable director—a fact which can be verified by the statistical records in the hospitals of the Province. The hands of the authorities have been tied, however, and will continue to be tied until the vice situation has been dealt with. Dr. Haywood is to be congratulated on his action. It looks as though it would bring results.

The Public Health Journal

VOL. XIV. TORONTO, FEBRUARY, 1923 No. 2

The Work of the Public Health Nurse in Montreal

PREPARED FOR THE McGILL SCHOOL FOR GRADUATE NURSES, BY DOCTOR EUGENE GAGNON, *Superintendent, Division of Child Hygiene, Health Department, Montreal.*

BEFORE entering into the subject of the work of Public Health Nurses in Montreal, I would wish to express my thanks to Miss Shaw, Directress of the course, and Miss Smellie, for affording me this opportunity of addressing a group of graduate nurses who are being prepared by assistance to fulfil duties the importance of which is being realized more generally every day, as we begin to understand more clearly the importance of preventive therapeutics, and how splendidly the nurse can forward this object by spreading ideas of Hygiene.

I shall dwell principally on the work done by the Nurses in the Schools of Montreal, though I should like, if time permits, to say a word or two regarding their duties for the protection of infants, in our Baby Clinics, and for children of pre-school age.

Medical inspection of schools was inaugurated in Montreal in the year 1906, and two nurses were attached to the work in 1908. Consulting the records since that date, we find that from 1912 to 1913 there were four nurses, the number being increased to eight the following year, and kept at that number until 1918.

Previous to the year 1918, medical inspection of schools formed a part of the Department of Contagious Diseases, the staff being chosen from that Department. In that same year, this staff consisted of nineteen doctors and eight nurses, for a school population of 100,000 children; a glance at these figures will be enough to convince one of the fact that with so limited a number, it would be impossible to organize the work satisfactorily.

The problem of medical school inspection had passed the experimental stage, was firmly established, and it became more and more evident that better results would be obtained by giving the greater part of the work to be done to nurses, acting under the supervision of a medical-school inspector.

It is generally agreed that each doctor could have the supervision of approximately 4,000 pupils, and each nurse of about 1,000, these figures varying according to the population, and extension of the school district, the number of children in a family, and the capacity of the school.

It is an evident fact that if two or more children of the same family attend a school, the work of home-visiting is much simplified, as the defects of several children can be explained to the mother, and treatment urged in one visit. Also, if the district is densely populated, the visits to the home can be arranged in groups, so as to save much time in going from one to another; allowing a large number of visits being paid in a limited time. On the other hand, in those school districts where the population is thinly distributed over a large area, much time is necessarily spent in going from one visit to another, so that it is a difficult matter to establish any fast rule, regarding the number of pupils to be assigned to each nurse.

I believe that the above-mentioned number of pupils to be assigned to each doctor and nurse could be doubled without impairing too much the efficiency of the service, but it becomes increasingly evident that with only eight nurses for 100,000 pupils the best results were impossible, the long interval between the visits to the schools taking away much of their usefulness, and that a complete reorganization was absolutely necessary in order to establish a more complete co-operation between the school, doctor and nurses.

In 1918 was organized the Division of Child Hygiene, the staff doing Medical-School Inspection being transferred to this new Division, and the administration at the same time voting sufficient funds to allow of engaging eleven more nurses, which made their number equal to that of the doctors.

This was of course an improvement, but the staff was still too small, so that in 1919, the budget allowed for thirty-six nurses, making an average of more than 3,000 pupils to each nurse. Since that year, in spite of reiterated request on our part, and the ever-increasing number of scholars, whose number now reaches 115,000, our administrators, being forced to exercise economy, have been unable to augment the number, and it has even been impossible for

us to replace this year, a doctor and a nurse who resigned at the end of last year.

Thus the staff of Medical-School Inspection at present consists of:—

1 Superintendent.

1 Medical Inspector-in-Chief.

1 Nurse-in-Chief.

1 Nurse-Supervisor of Baby Boarding Homes and Private Maternity Homes.

33 School Nurses.

15 Medical Inspectors, of whom 5 are on part time, and 10 on full time, that is to say, from 9 a.m. to 5 p.m.

As regards the Nurses, each one has an average of 3,500 school children under her supervision, and, as there are 248 schools, the average of these to each nurse is 7½, which is too large a number to allow satisfactory supervision, especially concerning contagious diseases, for the proper control of which a daily visit to the school is absolutely necessary.

If I appear to have gone considerably into detail regarding the administrative organization, it is so that you may understand the difficulties one has to contend with in elaborating a schedule of school inspection. I would like, however, to add that in spite of our limited means of action, we have endeavored with the help of the experience of other places, to make the most of our feeble resources, which naturally leads me to the subject of the organization itself.

Duties of the Staff.

1*st. Nurse-in-Chief* (*Supervisors of Nurses.*)

The Nurse-in-Chief acts as intermediary between the Superintendent, from whom she receives her orders which she is to transmit to the nursing staff, seeing that they are executed, and the nursing staff itself, who talk over with her any question which may arise in the course of their work.

There is only one Nurse-in-Chief for 33 school nurses (Field Nurses) notwithstanding that experience shows that there should be one at least for each 20 nurses. Here also our number is short. Her duties are most important; she introduces their work to the new nurses, showing them all the details of daily routine; she supervises the punctuality of the nurses; to this end paying visits to the different nurses in the schools without notifying them beforehand; she sees that the work is properly done, the cards kept up-to-date, the number of classes inspected, and the date on which this

was done, so as to be certain that the service is efficient. She also occasionally accompanies the nurses on their home visits, in order to note how the instructions to the parents are given.

2nd. The Visiting Nurses (Field Nurses).

The Nurse's visit to her schools are made on days arranged for by the schedule prepared for every day of the week by the Superintendent of the Division, a specimen of which has been prepared to give you a clear idea of the interrelation of the work of the Nurse with the Medical-Inspector.

If it becomes necessary to temporarily change this schedule for any important reason, the nurse is required to notify the Nurse-in-Chief, but no permanent change can be made without the authorization of the Superintendent of the Division.

This system, arranging as it does for two or three visits a week to each school, allows the Nurse-in-Chief to observe the punctuality of the nurses; and to require explanation from them if at any time she should not find the nurse at the school on the day indicated by her schedule.

Concerning the Nurse's duties, details are given in a circular letter, distributed to the Principals, which reads as follows:

THE NURSE.

1st—The Nurse will accompany the doctor on his visits to the schools and will refer to him all such cases of skin disease as require diagnosis, and receive instructions for treatment.

2nd—She will apply provisional dressings to wounds, and to slight skin conditions.

3rd—She will investigate all cases of pediculosis, and distribute instructions as to treatment, referring to the doctor all incorrigible cases, so that they may be excluded from the school.

4th—She will refer to the Principal, for exclusion, all cases which may show symptoms of fever or of acute diseases.

5th—She will exercise particular supervision over the pupils who are neighbors in class of a child excluded for contagious disease, and will request that they be sent home on the first signs of illness, fever, etc.

6th—She will classify the medical inspection cards of each school and will forward the cards of any children transferred to other schools.

7th—To assist her in this work, she will ask the permission of the Principal to refer each month to the application book in his

office, so as to note all new pupils admitted, and the name of the school from which they came, and will request from the Nurses of these schools the transfer of their cards.

8th—She will act as assistant to the doctor during his examination of the pupils, noting on their cards all defects found by him and any observations he wishes to keep.

9th—She will make an elementary examination of the vision, hearing, and dentition of all pupils.

10th—She will visit the homes of those pupils presenting serious defects, and urge the parents to have them treated. She will also visit homes to enquire into cause of absence, when requested to do so by the Doctor or Principal.

11th—In the course of these home visits, she will take every occasion of giving advice regarding any babies in the homes, and encourage the mother to attend the Baby Clinic in that district.

This is a summary of the duties of the nurse, it being understood that not all these details are attended to on each visit to the school. Her work varies according to whether she is alone or with the doctor, and also according to the time of the year.

I have said elsewhere that for the most part the schools are visited by the nurse two or three times a week; the doctor, however, makes only one visit, and in cases of small and unimportant schools, his visits are reduced to one in every two or four weeks, according to the number of pupils admitted to the school.

The schedule of visits of Doctor and Nurse are so arranged that the Doctor, on each of his visits to the school, is met by the Nurse.

The responsibility of the Medical Inspection rests with the Doctor, the Nurse acting as his assistant, and I beg to assure you that this system has produced a most harmonious co-operation each attending to his or her own duties, and both exerting themselves with enthusiasm for the great work of safe-guarding the health of the children.

During the Doctor's visit to the school the nurse assists him in his work, notifies him of any case of suspected communicable disease, that she may have met with, receives instructions regarding each case, prepares the pupils for general physical examination, and registers on the cards the result of the examination. She also arranges with the Doctor about the work to be prepared for his next visit, and verifies the list of pupils to be visited at their homes.

When the Nurse is alone, her work is altogether different. She occupies herself principally with the cleanliness of the pupils, inspecting for parasitic disease of skin or scalp (scabies, pediculosis),

also in doing small dressing for minor affections of the skin, or an emergency dressing in the event of accident. She also investigates cases of defects found by the Doctor on his visit, to see if they are receiving treatment. She has charge of the medical inspection cards, classifying them and keeping them alphabetically arranged so as to find them without loss of time. When a pupil is transferred to one of her schools, she sends a request for his card to the school from which he comes.

During the course of the year, the Nurse is called upon to pay particular attention to different parts of her work, on account of special conditions in the schools. It is for this reason that during the month of September, when the pupils are not yet definitely arranged in their classes, she makes a rapid and general inspection of all the pupils of her district, to eliminate cases of pediculosis, skin disease, and such children as have not been vaccinated. This preliminary inspection is of the greatest importance in preventing the spread of communicable disease, for one or two cases in a class are sufficient to infect all the others.

The children whose heads are not clean, are sent home with a notice to the parents to the effect that they will not be re-admitted until they have been treated, and a list of such children is kept for reference.

This inspection of the classes is kept up during the year, at least twice a month for the primer grades who are more likely to suffer from neglect, and at greater intervals for the senior pupils, where there is less necessity for supervision and among whom examination of suspected cases is generally sufficient. Another reason is that in the senior grades the programme of study is much more heavy and the teaching staff naturally object to too frequent disturbance of their classes.

To the Nurse is confided the entire charge of the Medical Inspection Cards, and classifying these and keeping them in order occupies a large part of her time in the schools. She keeps them divided into classes, arranged alphabetically for boys and girls, and has an index prepared on which she notes the date on which each class was examined either by the Doctor or by herself. The card accompanies the child during all his school age, necessitating its transfer each time he changes from one school to another, or from one class to another in the same school. At the beginning of the school year, when all the pupils change classes, and again in January at the time of half-yearly promotions, this work becomes really stupendous. It is made even more so by the fact that a great number of the

Jewish pupils choose to alter both their surname and their given name, so that it is a matter of impossibility to trace their cards.

In this way, there remains each year a large number of cards impossible to classify, unless some clue is given as to their former name, which occasionally happens. The methods of exchange of cards between schools has been very much improved of late, and each year we note some progress, but no absolute solution of the problem has yet been found, especially in the large schools, holding 1,000 to 1,500 pupils, where it is next to impossible to familiarize oneself with each pupil.

These cards are, in some cities, left in the classes and in charge of the teacher, who attends to their classification and exchange. This system without doubt saves the nurse an enormous amount of work, and would be an excellent one, on condition that the teacher realizes the importance of the cards, and has time to give them the necessary care. But, on the other hand, there is this inconvenience, that the nurse never has the cards at hand, and that the Nurse-in-chief never could refer to them without disturbing the classes, which in many schools would not be tolerated.

When the cards are kept in the Nurse's desk, she can work at them in spare moments, and sort out frequently those pupils who are unclean, or who suffer from defects, who will be sent to the medical room for re-inspection without interfering too much with the teacher's work. The fact that the work can be done more rapidly by giving the nurse the charge of the cards, compensates in a measure for the time taken up by the classification.

To find more easily the cards of defective children, indicators of different colours are made use of, one colour being exclusively for those cases the nurse wishes to see again, such as pediculosis, skin conditions, and uncleanliness, another calls attention to defects of dentition, and a third to all other defects. These indicators are attached to the upper edge of the card, the left half being reserved for that belonging to the nurse, and the right for the two others. The position of the indicator on the card is also significant; in serious cases requiring frequent supervision the indicator is placed near the centre of the card, and in less important cases, it is placed toward the outer edge.

The accessibility of the cards is also necessary in order to prepare a list of those pupils who must have home visits paid, and to note the result of the visit. These home visits form an important part of the Nurse's work, for two reasons: 1st, to facilitate control of contagious disease among the children who are absent from

school; 2nd, to obtain correction of defects and treatment of existing disease.

In order to control contagious disease in the homes, the Principal gives to the Nurse a list of pupils who have been absent for four or five days, and for whose absence no satisfactory reason has been given; in these cases she makes an investigation at the homes, and if she discovers any reason to suspect communicable disease, she reports the case to the Contagious Disease Department without loss of time. A doctor is at once sent from that Division to verify her report, and if he confirms it, a notice is immediately sent to the school, insisting that all the children of that family who attend it be sent home.

Similar notice is sent to the school in all cases of contagious disease reported directly to the Division, but it often happens that a child is found to have measles or other eruptive disease without a doctor having been consulted. In this way the case has not been reported, and the other children continue to attend school, thus spreading contagion. This condition of affairs is of the utmost importance to prevent.

When a child has been sent home on account of contagious disease, he cannot be re-admitted to the school unless he brings a certificate from the Contagious Diseases Division, certifying that all danger of contagion has disappeared. The nurse should, therefore, constantly bear in mind the list of contagious cases, and assure herself from time to time that no member of the family has been readmitted without a certificate of this kind. I must add that the School Nurses do not visit homes in which contagious disease has been declared, and when she is investigating the cause of absence, makes her inquiries at the door, not entering the house until she is completely satisfied that there are no grounds to suspect contagion.

In the case of home visiting to urge correction of defects, the following rule is observed: A notice is sent to the parents by the doctor at the time of examination, in each case where defects are found, advising them of his discovery, and recommending that a doctor be consulted without delay.

Feb 1923

Child Welfare in Prince Edward Island

By Amy E. MacMahon, *Chief Red Cross Nurse, Prince Edward Island Division, Canadian Red Cross Society.*

During 1922, health work has been undertaken along many lines, but most of the nurses' time has been spent on the school children.

One hundred and twenty schools were inspected during the year.

Three thousand seven hundred and ninety-one children were examined, weighed and measured.

95.2 per cent. of the children were found to have defects.

85.6 per cent. of the children were found to have defects, other than teeth.

24.6 per cent. of the children were 10 per cent. underweight for height and age, most of whom showed other signs of malnutrition.

Last year's report included most of the schools in the larger centres, while this year, with a few exceptions, the schools inspected were in the country districts.

It was astonishing to find that in the majority of the rural schools, a greater percentage of pupils showed signs of malnutrition than in the larger ones. In some cases this could be attributed to bad teeth and gums or to diseased tonsils and adenoids, while in a great many instances, it was evidently due to lack of food of the right kind, especially milk, eggs and vegetables. On the other hand, the children who had no marked physical defects and who were given the advantages of plenty of good country air and food, were of the type that Canada can well be proud of.

I should like to take this opportunity of thanking the doctors who so kindly gave their time to examine the pupils in many of the schools and to those who later gave the necessary treatments where the parents were unable to pay. When there was no doctor to be had, in addition to the weighing and measuring, the nurses' inspection consisted of the eye and ear tests, examination for apparent defects of nose, throat, teeth, skin and posture and for signs

[Editor's Note.—In Prince Edward Island child welfare work is conducted entirely by the Red Cross. The following report of the Chief Red Cross Nurse shows the pioneer work accomplished during the past year.]

of malnutrition. Each child was talked to individually by the nurse and advised according to his special needs.

In every case, explanatory slips were sent to the parents, stating whether the defects found in their children were slight and could be corrected by home treatment or whether the family doctor should be seen.

The trustees and parents were invited to come to the schools, in order to see the inspection being carried on and to hear the talks being given to the children on "Good Health Habits," the object being to encourage them to try to become bigger and stronger girls and boys, thereby helping their country as well as themselves. After school hours, literature and advice were given to the mothers, who brought their babies and young children to be weighed and examined. Frequently the nurses held meetings in the evenings, which were attended according to the degree of interest shown by the people in the district.

In the country districts, a great deal of dental attention is needed among both the children and the adults. Very often the teeth have been neglected, only because it was practically impossible to take the whole family long distances to the nearest dentist. It would be a great boon to the people if some dentist would take his equipment and tour the country during the summer months.

Very often the schools in the country were not at all in keeping with the fine homes and barns in the neighborhood. In most places, however, where there were Women's Institutes, the schools were more comfortable and in better condition. In every case a detailed report of the inspection of the school building has been sent to the local Secretary of Trustees, as well as to the Chief Superintendent of Education stating what has been found that was considered detrimental to the pupils' health and offering suggestions for the necessary improvement.

During the year, 2,495 health visits were made to the homes throughout the Island.

School	1,513
Pre-school	261
Infant	367
Prenatal	38
Adult, including T.B. patient	316
	2,495

The follow-up work has been most satisfactory. Parents, who would otherwise have paid little attention to the slips, have after

a personal visit, been convinced of the importance of having the defects corrected and been willing to co-operate with the nurses by encouraging the children to improve their "Health Habits."

In many cases where the children needed to be operated on and the parents were unable to pay, satisfactory arrangements have been made with the hospitals or with the local doctors. Even under these conditions, however, there are those who will not give their consent to having the children's tonsils and adenoids removed. This prejudice is however being gradually overcome.

Although some of the dentists in Charlottetown, have in urgent cases been attending gratuitously to the teeth of the poor children, referred to them by the Red Cross Nurses, a more satisfactory arrangement should be devised.

A great interest is being shown in health matters, as is apparent by the increased number of visits made to the Health Centre. The total number for the year was 2,991.

School children	1,627
Children of pre-school age	146
Infants	116
Prenatal cases	11
Parents with children	188
Adults for health advice	199
Emergencies	4

Instruction was given to mothers in the care and feeding of their babies and young children. As a rule, the mothers, especially the younger ones, were willing to carry out the advice given. The older children came to be weighed and to have their health habits checked up, for their interest had, in most cases, been roused by the health talks given during the school inspections. Those who found that they had made more than the average monthly gain, at once attributed it to their improved health habits, especially to the increased amount of milk taken, or to extra hours of sleep in well ventilated rooms. All children whether examined previously at school or not, received the same attention and supervision. Quantities of literature on different health subjects were distributed from the Centre during the year.

The Child Welfare and Public Health booth at the Provincial Exhibition this year, attracted a great deal of attention. It was visited by several thousand people, who had the exhibit explained to them and who took away health literature. What proved to be an interesting part of the demonstration was the children's food

table. On one side was shown the actual food that made for better health and growth and on the other what needed to be avoided, both as to the choice and the cooking of the food. There were 585 boys, girls and babies weighed and measured. A health leaflet was provided for each one, on which was marked their actual weight and height and how they differed from the average child of the same age. Those who needed further advice were encouraged to visit the Red Cross Health Centre, later. During the afternoon, local doctors and dentists gave talks to the people both individually and collectively, examining the children when requested to do so.

Last winter two groups of school girls between the ages of 14 and 16 were organized into "Health Leagues" and met in the Health Centre twice a week. Talks and demonstrations were given on "Personal and Home Hygiene," "Elements of Home Nursing," and the "Care of the Baby." At the close of the classes, an appropriate prize was awarded to the girl who wrote the best paper on what she had learned during the course.

During the spring a course of five lectures was given to the students of the Prince of Wales College, on the different phases of "Health Education," for which several of the doctors and a dentist kindly gave their services. This course proved of great value as shown by the marked interest taken by the young teachers this autumn, when the nurses were inspecting their schools.

Often we are called upon to co-operate with other organizations. For example, last winter a family was referred to us by the Red Cross of one of the Western Provinces. The father, an ex-service man, had gone to the west to work and on the death of his wife here, the children had been left destitute, with a girl of fifteen in charge. Till the arrival of the father, this family was supervised by one of our nurses and the necessary food procured. The Western Branch refunded what had been spent.

We have been able to co-operate with the Soldiers' Civil Re-Establishment by visiting their tuberculous patients who were in the different districts where the nurses were working. This has been of mutual advantage, for often school children were living in the same house and the nurse could then give the necessary advice and supervision. In one case it was necessary to advise that a returned soldier be sent back to Kentville Sanitorium, where he had been previously under treatment.

Several times we have been able to get in touch with people coming into the Province, who have been referred to us by the Immigration Officers at the ports of landing.

A great number of people still do not seem to realize that this work has so far been merely a demonstration, carried on by the Red Cross Society and that naturally preference was given to the larger centres where more people could be reached and to the districts that showed the greatest interest and wrote asking for the nurses.

In some places, the people showed great interest and appreciation while in others, they were apparently more or less indifferent.

The success of the work is in direct proportion to the interest shown by the parents and teachers. The interest of the children can always be aroused, but it cannot be expected that they will continue to carry out their part, without the co-operation of the home and school.

Sewage Treatment for Isolated Houses and Small Institutions where Municipal Sewage is not Available

By Evan Parry, M.R.A.I.C., *Supervising Architect, Federal Department of Health.*

(*Continued from January Issue.*)

Method of Treatment.

It can be assumed for the purposes of this treatise that there are two general methods of treatment of sewage, the dry and the wet. The dry method, being both practical and safe, should always be adopted where no other water supply than a spring or a well with hand pump is available.

Dry Method.

The ordinary outside privy cannot be too highly condemned, it being a menace to health, to say nothing of its inconveniences. Where a sufficient water supply is not available for the installation of a bathroom, equipped with modern plumbing, or if the expense is too great, a chemical toilet should be installed inside the house.

The chemical closet is a type of sanitary privy in which the excrements are received directly into a water-tight receptacle containing disintegrating chemical disinfectant, and is meeting with considerable favour for camps, parks, farm-houses, rural dwellings, schools, hotels and railway stations. These chemical closets, as they are called, are made in different forms, and are known by various trade names. In the simplest form a sheet-metal receptacle is concealed in a small metal or wooden cabinet, and the closet is operated usually in much the same manner as the ordinary pail privy. These closets are very simple and compact, of good appearance, and easy to instal or move from place to place.

These closets with vent pipe and appurtenances, ready for setting up, retail for $20 and upward, and can be obtained from any well-known mail order house within the Dominion.

This type of closet will prove a great boon in homes having aged people, invalids or frail children.*

For small institutions, schools, railway stations, camps, etc., etc., other than small private houses, larger tanks should be installed of 150 gallons capacity or upwards, and based upon the calculation of one-half gallon per individual per day.

The simplicity of this installation guarantees its efficiency and, further, has its advantages, by being able to procure the necessary parts in any town within the Dominion.

The contents of these closets, hereinbefore described, when it becomes necessary, should be buried in trenches a plough or spade deep and covered over with soil. The covering up process can be accomplished by ploughing or spading on either side of the trench and turning the earth into it, thus leaving another trench ready for the emptying operation of the contents. *The area of land selected for this disposal should be as far as possible from any source of water supply.* This process prevents the possibility of contaminated soil being carried or transmitted by animals, poultry, or flies, etc., which medium is so often the cause of disease. The area of ground can be used again for the same purpose after a period of three or four months without ill-effect.

In most parts of the Dominion where the frost line is deep, it is advisable to spade or plough a series of troughs in the fall before the frost is in the ground, so that the content may be emptied into these furrows during the winter and covered over in the early summer when the frost is out of the ground.

In some of the Provinces of the Dominion where these closets are installed in schools a bonus is given by the Departments of Education to the schools, which bonus goes toward defraying the expense of the installation.

The compounds or mixtures commonly used in chemical closets are of two general kinds: First, those in which some coal-tar product or other oily disinfectant is used to destroy germs and deodorize, leaving the solids little changed in form; second, those of the caustic class (by all means the best) that dissolve the solids, which, if of sufficient strength and permeating every portion, should destroy most if not all bacterial life, and at the same time liquefying the excreta.

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* Chemical closet. A, water-tight sheetmetal container; B, metal or wooden cabinet; C, wooded or composition seat ring; D, hinged cover; E, 3 or 4-inch ventilating flue extending 18 inches above roof or to a chimney; F, air inlets.

The following formula is recommended for the disinfectant to be used in connection with these toilets.

FORMULAE.

For tank of 150 *gallon capacity.*

5 gallons water.
30 lbs. flake soda ash or wyandotte.

For chemical toilet of 9 *gallon capacity.*

3 pints water.
2 lbs. flake soda ash or wyandotte.

(Flake soda ash or wyandotte are easily obtainable throughout the Dominion.)

In each case the doses given are to be placed in the tanks or containers after the content has been emptied and are sufficient for the necessary action until the receptacles are full and require to be emptied.

It will be found necessary to break down the cone of excremental matter, which will form from time to time with a stick so as to insure complete disintegration, etc.

WET METHOD.

By far the most satisfactory method yet devised of treating sewage calls for a supply of water and the flushing away of all wastes as soon as created through a water-tight sewer to a place where they undergo treatment and final disposal.

Cesspools cannot be too highly condemned. A cesspool is built in the ground, with wood, brick or concrete walls, and with no bottom. The sewage is discharged into this receptacle, and the liquid gradually seeps away. Practically no purifying action whatever takes place in it, and it must be frequently cleaned out. The ground for considerable distance around it will soon become highly polluted and a menace to health.

Tank treatment should be used without exception where a municipal sewage system is not available. Whether or not this method is to be followed by further treatment depends entirely upon local conditions.

The location of the installation depends upon the local topography, etc. Generally it should be placed on the side of a hill wherever possible, and should be so located that the ground does not slope from the installation to any buildings, wells, or springs.

The rural dweller seldom chooses the site for his home with respect to the ease of sewage disposal. The sewage disposal usually advocated for rural needs is that by subsurface disposal. For success the method requires: (1) a porous, well-drained soil; (2) a fall of the ground from the dwelling to the tank of at least 6 inches per 100 feet; (3) a location of disposal plot below wells and water supplies.

In the wet and heaviest clay soils, or wherever rain water is observed to require days to drain away, it is a serious question whether the ordinary householder is justified in having a complete plumbing system in his home. Certainly he should not be guided alone by the general instructions issued on the subject, but should consult the Provincial Board of Health, or secure the opinions of those who have had experience in similar conditions of soil and sewage flow. The least insanitary system under these conditions would probably limit the use of the sewer system to the slops, lavatory, bath and laundry waste, and use a chemical closet in place of the water flushed toilet, since this is the source of waste which is most dangerous in a poorly working sewage system.

No part of the installation, even the pipe lines, should be closer than fifty feet from any well, and should always be located on the down hill side of the well. If it is necessary to have the piping pass near a well, cast iron pipe with leaded joints should be used.

In tank or septic tank treatment the sewage is allowed to stand in a tank, the solids settling to the bottom and disintegrating. A thick scum will form on the surface, keeping out the light and air, thus favouring the growth of a type of bacteria which liquefy the organic solids present.

Prototypes of the septic tank were known in Europe nearly 50 years ago. Between 1876 and 1893 a number of closed tanks with submerged inlets and outlets embodying the principle of storage of sewage and liquefaction of the solids were built in the United States and Canada. It was later seen that many of the early claims for the septic process were extravagant. In recent years septic tanks have been used mainly in small installations, or, where employed in large installations, the form has been modified to secure digestion of the sludge in a separate compartment, thus in a measure obviating disadvantages that exist where septicization takes place in the presence of the entering fresh sewage.

The function of the septic tank is merely to relieve the disposal area of a considerable amount of greasy and solid particles which otherwise choke it quickly. Bacterially the effluent is decidedly un-

safe. Physically it is more obnoxious than before. *Claims of disease-free and of pure septic tank effluents are unwarranted and dangerous utterances.* As to the effects upon the growth and virulence of disease germs, insufficient is known definitely. It is not believed that such germs multiply under the conditions prevailing in a septic tank. If disease germs are present many of their number, along with other bacteria, may pass through with the flow or may be enmeshed in the settling solids, and there survive a long time. Hence the homesteader should safeguard wells and springs from the seepage or discharges from a septic tank as carefully as from those of privies and cesspools.

When a bottle of fresh sewage is kept in a warm room changes occur in the appearance and nature of the liquid. At first it is light in appearance and its odor is slight. It is well supplied with oxygen, since this gas is always found in waters exposed to the atmosphere. In a few hours the solids in the sewage separate mechanically according to their relative weights; sediment collects at the bottom, and a greasy film covers the surface. In a day's time there is an enormous development of bacteria, which obtain their food supply from the dissolved carbonaceous and nitrogenous matter. As long as free oxygen is present this action is spoken of as aerobic decomposition. There is a gradual increase in the amount of ammonia and other gases and a decrease of free oxygen, the latter going to support bacterial life. When the ammonia is near the maximum and the free oxygen is exhausted the sewage is said to be stale. Following exhaustion of the oxygen supply, bacterial life continues profuse and becomes anaerobic, but it gradually diminishes as a result of reduction of its food supply, and the poisonous effects of its own wastes. In the absence of oxygen the bacterial action is spoken of as anaerobic decomposition. The sewage turns darker and becomes more offensive. Suspended and settled organic substances break apart or liquefy later, and various foul-smelling gases are liberated. Sewage in this condition is known as septic and the putrefaction that has taken place is called septicization. The odor eventually disappears, and a dark, insoluble, mosslike substance remains as a deposit. Complete reduction of this deposit may require many months.

The four parts of a septic tank installation with a subsurface disposal system comprises: (1) a house sewer, properly vented at the building; (2) a septic tank for retaining the grease and sewage solids; (3) a disposal field provided with a system or ramification of underground tile, or other channel arrangement, from which

the sewage may seep away slowly into the soil. These parts will be described in the order named, although the last should have the first consideration.

If the cellar or basement contains plumbing fixtures, the house sewer should enter one or two feet below the cellar floor. If all plumbing fixtures are on the floors above, the sewer may enter at no greater depth than necessary to insure protection from frost outside the cellar wall. Digging the trench and laying the pipe should begin at the tank or lower end. The large end of the pipes, called the hub, should face uphill, and the barrel of each pipe should have even bearing throughout its length. Sufficient earth should be removed from beneath the hubs to permit the joints to be made in a workman-like manner.

The house sewer may be vitrified salt-glazed sewer pipe, concrete pipe, or cast-iron soil pipe. The latter, with poured and caulked lead joints makes a permanently water-tight and root-proof sewer, which always should be used where the vicinity of a well must be passed; 4 or 6-inch pipe may be used, depending mainly on the fall and in less degree on the quantity of sewage discharged. As a measure of economy the 4-inch size is favoured for iron pipe. If vitrified pipe is used, the 6-inch size is preferable, as this size is made straighter than the 4-inch size, and is less liable to obstruction. The fall in 100 feet should never be less than 2 feet for 4-inch size, 1 foot for 6-inch size.

Canadian Social Hygiene Council

A SOCIAL CASE SHEET INVESTIGATION.

Result of Survey of Venereal Disease Patients in Hospital Clinics in the City of Toronto, During the Months of July and August, 1922.

BY MILDRED KENSIT.

(*Continued from December Issue.*)

PART II.—SUMMARY OF MEN.

NATIONALITY of 56 men was as follows:—

Jew	1	1.78%
English	13	23.21
Roumanian	2	3.57
Irish	4	7.85
Canadian	25	44.64
Scottish	5	8.92
Coloured	1	1.78
French Canadian	1	1.78
U. S. A.	2	3.57
Italian	2	3.57
	56	

The RELIGIOUS DENOMINATIONS to which they belonged were as follows:—

Hebrew	2	3.57%
Methodist	9	16.07
Greek Orthodox	2	3.57
Anglican	16	28.57
Baptist	3	5.35
Presbyterian	9	16.07
Roman Catholic	10	17.85
Protestant	2	3.57
Brethren	1	1.78
Congregationalist	1	1.78
Unknown	1	1.78
	56	

Attendance at churches of the denominations to which the men belonged was conspicuous by its absence:—

Regular	11
Rare	9
Occasionally	11
None	15
Unknown	10
	56

The following figures show that most of the men nearly completed Public School education and that as soon as they reached the age of 14 they left for economic reasons regardless as to grade reached.

Public School	24	
Public School Sep.	2	
Public School Eng.	8	
Public School, Scotland	3	
Public School, U.S.A.	1	
Public School, Ireland	1	
Italy	1	
Roumania	1	
Unknown	15	(no records available)
	56	

GRADES REACHED AT LEAVING WERE:—

Junior III.	1	2.63%	
Senior III.	3	7.89	
Junior IV.	9	23.68	
Senior IV.	6	15.78	
Junior V.	1	2.6	
Senior V.	3	7.89	
Junior VI.	0		Unknown 18
Senior VI.	3	7.89	No records
Entrance	5	13.15	
High School	5	13.15	
Matriculation	1	2.63	
3 years in Italy	1	2.63	
	38		

AGE LEAVING:—

1 left at 9 years	2.94%		
1 left at 11 years	2.94		
1 left at 12 years	2.94		
6 left at 13 years	17.64		
15 left at 14 years	44.11		
1 left at 15 years	2.94	Unknown	22
4 left at 16 years	11.76	No records	
4 left at 17 years	11.76		
1 left at 18 years	2.94		
34			

The following table shows the relation of grade attained and age at leaving of 34 men patients, 22 others showed no educational records at all and have not been included in the following table:

RELATION OF AGE TO STANDARD ATTAINED (MEN)

	J III	S III	J IV	S V	J V	S V	J VI	S I	Entr.	H. S.	Mat.	Unkn.	Total
9 yrs.	1												1
11 yrs.			1										1
12 yrs.	1												1
13 yrs.			2			1			2			1	6
14 yrs.	1	1	2	2		2		2	2	1 (2 yrs.)		2	15
15 yrs.				1									1
16 yrs.						1		1	1	1			4
17 yrs.				2						1 (2 yrs.)	1		4
18 yrs.										1			1
	3	1	5	5		4		3	5	4	1	3	34 men

In dealing with the question of recreation in fourteen cases records were not available as the patients had either left or been discharged and the facts had not been previously obtained.

Therefore the following figures apply only to 42 men, some of whom are in more than one column.

Movies	17	40.47%
Reading	16	38.09
Games	10	23.8
Walking	10	23.8
Pool	6	14.28
Motoring	6	14.28
Dancing	5	11.90
Swimming	4	9.52
Cards	3	7.14
Music	2	4.76
Skating	2	4.76
Watch Games	2	4.76

Occupational work of 56 men showed that they do not change the kind of work in which they are engaged as the women do.

The following lists show great variety of trades:—

Driver	6	10.72%
Labourers	7	12.5
Factory	1	1.78
Clerk	6	10.72
Mechanic	9	16.07
Chauffeur	7	12.5
Salesman	4	7.14
Trade	17	30.35

Trades Included—2 tailors, meter reader, carpenter, freight handler, bell boy, 2 shoe shine, collector, baker, movie operator, billiard maker, treader of tires, besides those tabulated above.

Home Conditions among the men did not show the same relation to immorality as in the case of women. Immorality appears to be looked upon by men as a legitimate practice in response to their desires. I found the men were not generally immoral so long as they were married. Statistics showed that 94.64% of these were practising immorality while they were single.

AGE OF FIRST IMMORALITY:—

1 at 7 years. (taught by maid servant)
3 at 14 years
3 at 15 years
6 at 16 years

AGE OF FIRST IMMORALITY—*Cont.*

9 at 17 years
12 at 18 years
3 at 19 years
4 at 20 years
3 at 21 years
3 at 22 years
1 at 23 years
1 at 50 years
7 unknown.

56

LOCATION OF IMMORALITY:—

Park	7
Country roads	7
House of assignation	2
House of prostitution	16
Auto	12
Men's room	2
Girl's room	19
Hotel	6
Others (brother's office)	1

It is difficult to get reliable figures as to locality as it varies, the offenders using sometimes one location and sometimes another.

Among the cities where the patients claim they were infected the following appear:—

Toronto	38
Collingwood	1
Hamilton	2
St. Thomas	1
Flint Mills	1
Welland	1
Rouen, France	1
London, Eng.	3
Bristol, Eng.	1
Ireland	1
Belfast, Ireland	1
Montreal	2
Winnipeg	3
	56

What form does remuneration take in payment to the women for immorality.

31 men out of 56 paid cash.
3 men out of 56 gave meals in payment.
1 man out of 56 paid for theatre tickets
2 men out of 56 took girl to movies.
6 men out of 56 took girl for auto drive.
13 paid nothing whatever.
1 girl exposed herself in payment of taxi cab.
1 was engaged to girl.
When cash is paid it varies from $2.00 to $5.00.

Under the heading SEXUAL HISTORY these factors were ascertained:—

9 out of 56 were immoral overseas.
7 out of 56 were immoral because of separation from wife.
19 out of 56 were immoral by mutual agreement with girl.
25 out of 56 were immoral through desire.
14 out of 56 were immoral when solicited by girl.
8 out of 56 were immoral under influence of liquor.

Some of the men fell under more than one heading and therefore the correctness of the figures is difficult to ascertain.

CIRCUMSTANCES UNDER WHICH MEN AND WOMEN MET:

36 out of 56 were "picked up."
7 out of 56 were "introduced."
5 out of 56 were "schoolmates."
20 out of 56 were "solicited by girl."
9 out of 56 were "old friends."

SEX EDUCATION:—

Most of the men admitted they knew very little about sex matters, and where they had knowledge it was gained when in the army.

6 instructed in army.
25 admitted no instruction.
2 vaguely warned.
19 no recollection whether they had any knowledge.

Venereal Disease Control in Ontario

By Miss Edna L. Moore, *Social Service Nurse, Division of Communicable Diseases, Provincial Board of Health, Ontario.*

THE Ontario Board of Health has $115,000 annually at its disposal for combating Venereal Diseases. One-half of this amount is from the Federal Government and one-half from the Provincial Government. This money is for the payment of salaries, travelling expenses, educational purposes, free treatment of patients, free apparatus and equipment, and, if necessary, making of Phenarsenamine (606) or such other drug as is considered advisable. Clinics have been established in the larger centres—Ottawa, Kingston, Hamilton, London, Windsor, Owen Sound, Brantford, St. Catharines, North Bay, Peterborough, and six in Toronto.

The Provincial Board pays fifty cents for each out-patient treatment, and also fifty cents a day for in-patients for a period not exceeding three months. Phenarsenamine (606) is supplied free to all clinics. Five hundred dollars is paid annually to the physician in charge of the clinic; also $500.00 is paid toward the salary of the Social Service nurse. Free record forms are supplied. One thousand dollars is paid for purchasing apparatus and equipment according to a schedule prepared by the Board.

Each clinic is required to have a Social Service nurse. The appointments are made locally, and the salary, over $500.00 is paid by the Local Board of Health. While it is highly desirable that nurses in this special field of nursing should have special training, in the agreement between Provincial and Local Boards, the requirement is "the nurse shall be a graduate of a recognized training school." However, the Provincial Board advises that immediately an appointment has been made, the nurse should spend three weeks or a month in Toronto observing the system of Public Health Nursing in operation there. Opportunity is given to observe court procedure, probation, parole, and methods of co-operation with other agencies, as well as to become familiar with the provincial plan of organization. Reports of work are made to the Provincial Board monthly.

In towns and rural districts where clinics would not be feasible, free Phenarsenamine and apparatus, as necessary, is supplied. The service of a specialist is also provided for the first treatment.

Treatment in Provincial Institutions is as follows:

(a) In Reformatories and Industrial Farms the treatment is carried out by a specialist from the Provincial Board who visits the institutions weekly. The Board supplies Phenarsenamine, and the institution provdes the apparatus and equipment.

(b) In Ontario Hospitals for the Insane, free Phenarsenamine with apparatus and services of a specialist for the first treatment is supplied, after which the Institution is expected to carry on treatment by means of its own medical staff.

(c) Free Phenarsenamine for other hospitals throughout Ontario may be obtained through the local Medical Officer of Health.

Circular letters have been written to doctors, dentists and druggists, dealing with various phases of the Venereal Disease problem.

Pamphlets have been printed for the use of the general public and also for patients under treatment.

Phenarsenamine is manufactured and supplied for the free treatment of patients who are unable to pay.

Films for the education of physicians, nurses, and the general public have been purchased and are being shown throughout the Province.

There are nine Laboratories in Ontario; at Ottawa, London, Kingston, Fort William, North Bay, Sault Ste. Marie, Peterborough, Owen Sound, and Toronto. These are available for free laboratory diagnosis of syphilis and gonorrhoea.

Follow-up work in connection with Ontario Hospitals for the Insane is under way, and the contacts are examined in most cases of general paralysis.

Patients moving from one municipality to another during treatment are transferred through the Board in order that treatment may not be discontinued.

Canadian and American publications inserting ads. concerning irregular treatment of Venereal Diseases are warned, and, if necessary, prosecuted.

All possible assistance is given to Local Boards of Health.

The Provincial Board is working in close conjunction with the Canadian Social Hygiene Council, especially in their propaganda work.

Public Health Nurses in Venereal Disease Clinics

By Francis E. Brown, *Supervisor of Venereal Disease Nursing, Department of Public Health, Toronto.*

VENEREAL DISEASE NURSING is a new field of effort for the public health nurse, but one in which she has already proven her value. She has become the "aide" of the medical officer in the fight against this disease. As a result of her efforts the efficiency of the venereal disease clinic has been increased many times and through these clinics she has given valuable service to the individual patient and the community.

The duties of public health nurses in connection with venereal disease clinics may be dealt with under three heads,—

1. Duties in the clinic.
2. Duties in relation to the home and social environment of patients.
3. Duties in relation to the community.

1. Duties in the Clinic.

The duties of the public health nurse in the clinic require her attendance at all clinics and include the doing of anything which will contribute to the smooth running and efficiency of the clinic. In some cases it may mean that she is responsible on clinic days for the arrangement of clinic equipment, the preparation of the treatment room, and the giving of assistance to the clinic physician in carrying out treatment. Where these clinics are connected with a hospital, a pupil nurse is usually detailed to this duty. The latter arrangement is as it should be in order that the public health nurse be relieved for duties which more particularly belong to her.

Interviewing Patients.

The public health nurse interviews each new patient. In these interviews she obtains the information required for the social history records, she explains to the patient the nature of the disease, the necessity for regular and continued treatment and the danger of infecting others. If home treatment is ordered by the clinic physician she also explains the method of carrying out such

treatment. (In the case of male patients this is done by the physician.)

Correction of Physical Defects and Teaching Health Habits.

The public health nurse, working in these clinics, is interested first in securing for her patient a cure for venereal disease, but she is interested also in helping him to become as near as possible a physically perfect individual, living a life consistent with health. She will, therefore, be alive to and report to the physician for diagnosis any symptoms which would indicate the presence of other physical defects in her patient. If such defects are found to exist she will bring to bear all the resources of her hospital to secure the correction of these defects and the instruction of the patient in health habits.

Records and Reports.

The public health nurse is responsible for the social service histories and records of the clinic patients and for various reports that are sent out from the clinic from time to time.

It becomes her duty to see that the social history forms are filled out as accurately and completely as possible and that the information when obtained is made use of and referred to the proper source, *i.e.*, the names of contacts and sources of infection to the local or provincial boards of health, bawdy houses and persons of questionable character to the police for investigation, and social problems to the proper social agencies.

Clinic Atmosphere.

There is something quite characteristic of each clinic, not easily defined, but which may be called "clinic atmosphere." Upon this depends to a large extent whether the clinic attendance keeps up, whether the patients attend willingly or whether they will only attend when compelled to do so. The public health nurse can do a good deal toward creating a "good atmosphere" in her clinic. The time spent in speaking a friendly encouraging word to the patients as they come in, showing a little personal interest in them and their affairs, and straightening out any difficulties that may arise between patient and physician or hospital is well spent, because of the return it brings in increased attendance and contented patients.

2. Duties of Public Health Nurses in Connection With Home and Social Environment of Patients.

Unless there is a good reason to the contrary, and this to be decided after consultation with the clinic physician, the public health nurse should personally visit the homes of each patient attending the clinic for the treatment of venereal disease. The first visit should be made as soon as possible after the admission of the patient to the clinic. This is important because of the necessity of verifying addresses. It has been our experience that the addresses given are frequently incorrect and that it is only when a visit is made re non attendance that it is discovered that this is so.

The purposes for which visits are made to the homes of these patients are:—

To Secure Regular and Continued Attendance at Clinic.

Much valuable time and effort is wasted in clinics of this kind in treating patients who attend for a few times and then discontinue treatment while still uncured. The treatment of these diseases is long and tedious and frequently painful. The patients become discouraged, and their acute symptoms having disappeared they discontinue attendance at clinic, frequently disappear and are lost. The nurse by visiting these patients in their own homes and explaining carefully and repeatedly the necessity for continued treatment and the danger of insufficient treatment is able many times to bring about in the patient an attitude of mind which is more important in keeping him under treatment than all the laws or police authority in the land. If persuasion fails she has, of course, recourse to the law through the Medical Officer of Health.

The nurses too have an uncanny way of finding through neighbours, employers and even cartage and moving men, patients who attempt to lose themselves.

To Explain the Method of Carrying Out Home Treatment and to See that it is Carried Out as Ordered.

The routine treatment ordered by physicians in clinics for the treatment of gonorrhoea, which consists of daily vaginal douches of one solution or another is an important aid in clearing up the disease and reducing the length of time during which the patient must attend clinic. Without instruction few of these patients are able to carry out this treatment in a manner to make it at all

effectual. In the surroundings under which many of them live there may be no opportunity to take the treatment at all and many of them have not the proper utensils. The lack of time and privacy make it impossible for the nurse to give during clinic hours the detailed instruction necessary in these cases. She is able to do this much more effectively in the home by actual demonstration, if necessary. In the case of gonorrhoeal vaginitis in children, treatment will always have to be demonstrated. In some cases it may be necessary to secure for the patient douche bag and pan through some relief organization.

To Secure the Examination of Contacts and Sources of Infection.

This part of the work in connection with venereal disease clinics is that which is most difficult and requires the greatest amount of tact and understanding on the part of the nurse.

A quiet talk to the persons concerned in the privacy of their own home will often secure the results desired and abort the domestic tragedy so often threatened in these cases.

To Keep Informed of the Conditions Under Which the Clinic Patients are Living.

The public health nurse cannot say with certainty that her patient is carrying out the rules of the clinic in regard to treatment, conduct, etc., unless she knows something from personal observation of the manner of living of the patients attending her clinic. It is for this reason that the clinic nurse feels justified in keeping her patients under a certain amount of supervision, even though they may be attending regularly for treatment. It is rather embarrassing for the nurse to learn, for example, that the patient who has been attending the clinic regularly for treatment has been all the time (without the knowledge of the nurse) an inmate of a house of prostitution.

In visiting these homes the nurse frequently has the opportunity to do real missionary work by discovering and remedying ills both physical and social; illness, unemployment, non attendance at school, immorality in the home. These conditions, when discovered by the nurse, may be referred to the proper social agency to secure a remedy.

3. The Duties of the Nurse in Relation to the Community.

The first duty of the public health nurse in a venereal disease clinic is of course the securing for her patient a cure of the disease

for which he has come to the clinic. By doing this well she is also rendering a service to the community, for she is preventing the occurrence of other cases of venereal disease, which would have resulted in those exposed, if the patient had remained untreated and uncured. But to be complete her work must extend outside the clinic, and she must endeavour to prevent the occurrence in the community of the cases which are forever feeding the clinic. In order to do this she must deal with,—

(a) *The Contacts and Sources of Infection of Clinic Patients.*

The patient attending the clinic for the treatment of venereal disease is only one link in the chain of disease. Those who have been exposed to him are, if diseased, so many potential sources of infection and should be dealt with as such. The public health nurse who is truly "on her job" will not rest until this is accomplished, either by persuasion or by force of law.

The Conduct and Mode of Living of Patients Attending Clinic.

Those who are concerned with the treatment and cure of venereal disease have a responsibility toward the public which is greater than that of persons treating any other disease. This is true because the law of the country and medical ethics demand that these diseases be treated with a certain amount of secrecy and forbids the giving of information concerning persons so infected. Those concerned in treating such persons owe it to the public to see that, so far as in their power, these persons shall not, either innocently or otherwise, expose others to infection. The working out of this principle is difficult. For example, a woman under treatment for an acute gonorrhoea may be employed as domestic in a home where there are little children. The patient should not be allowed to remain in her position, the risk of infection is too great. The clinic nurse, knowing the facts, is not permitted to inform the mistress of the girl's condition. She must handle the situation by telling the patient that she must leave the situation or else it will be necessary to notify the Medical Officer of Health who in his turn would inform the mistress of the danger of the situation.

Medical authorities have long contended that in dealing with venereal disease they were concerned with the physical and not with the moral side of the question. Experience has proven that in considering this disease the physical and moral sides of the question, are so intimately connected that they cannot be dealt with separately. A sexually promiscuous individual is almost always

venereally diseased, is rarely completely cured and if diseased is always a spreader of infection. The old idea that a diseased prostitute is safe if under treatment has been thoroughly exploded. The conduct in regard to sex matters of the persons attending the venereal disease clinic becomes then a matter of concern to the public health nurse. She may not be able to change the conduct of these persons but should refer them to those organized to exercise some control over it.

Foci of Infection.

There exist in every community certain places and conditions which may be said to bear the relation to venereal disease that the stagnant water pool bears to malaria. These plague spots of our cities,—bawdy houses, rooming houses where immoral conduct is ignored or winked at, taxicabs used for immoral purposes, certain foreign restaurants which are nothing more than places of assignation, and certain dance halls, where prostitutes congregate—are an important factor in the spread of venereal disease and their removal and supervision is as much the concern of the public health worker as is the filling up of the water pool in the case of malaria.

Much valuable information may be obtained from the patients attending venereal disease clinics concerning the location and operation of these places and the nurse will see to it that this information is referred to those who have authority to deal with it.

PREVENTION.

It is now a known and acknowledged fact that prostitution, either professional or clandestine, is the chief factor in the spread of venereal disease. Prostitution is a complicated social phenomenon bound up intimately with such other social problems as, double standards of sex morality, mental deficiency, bad housing, lack of home training, lack of proper facilities for dealing with sex delinquents in courts and penal institutions, etc. The nurse in the venereal disease clinic is in a strategic position to gather data concerning the relation of these problems and prostitution which means venereal disease. Once having obtained the information, she will not be content until it is placed in the hands of those agencies organized to make use of it.

The field of endeavour for the nurse in venereal disease clinics is wide and her opportunitis for service are many. In order to meet these opportunities she must be a person with special qualifications which include a good technical training, intelligence and vision, and a fund of human sympathy and understanding.

Social Background

"Desertion in Toronto"

MEMORANDUM RE WIFE AND FAMILY DESERTION.—IMPORTANCE OF FAMILY DESERTION AS A SOCIAL PROBLEM.

WIFE and family desertion is one of our most serious social problems. The tremendous importance of the family in developing and maintaining character values, which are certainly the greatest asset of the nation, is only now becoming consciously recognized. The intangible loss to a child from being reared without a father is dimly being discerned and it is becoming almost a platitude that a community suffers or prospers in its children.

Wife and family desertion not only deprives the children of a father's care and association but very frequently deprives them also of the greater part of the mother's attention by forcing her into the additional role of bread-winner for the group. Moreover, the standard of living is almost invariably depressed to the detriment of the children involved.

AS A RELIEF PROBLEM.

Many deserted families struggle along without becoming dependent upon organized charity in any way. The number will never be known. However, the cases that do become a burden upon the charitable organizations is so great that unquestionably desertion must be recognized as one of the important causes of destitution and dependency in Ontario to-day.

From a mass of statistics collected from a great variety of organizations in various parts of the Province, but chiefly in Toronto, it is evident that in times of normal employment upwards of ten per cent. of the families being cared for by social agencies are in difficulties because of desertion by the husband and father.

The following statistics from certain large social and relief organizations in Toronto convey an idea, though an inadequate one, of the magnitude of the problem of desertion in Ontario communi-

ties. The figures cannot be totalled as no effort has been made to eliminate duplicates. For instance, many of the cases found under Welfare Branch Indoor Relief must necessarily appear also under admissions to children's institutions. It must also be borne in mind that some cases are dealt with by organizations not mentioned and also that a much greater number are able to manage without resource to any social agency.

The figures of the City of Toronto's outdoor relief for the past four years are as follows:

		FAMILIES.	
	Desertion.	Total.	% desertion
Year ending April, 1919	108	991	10.9%
Year ending April, 1920	106	927	11.4%
Year ending April, 1921	178	1,802	9.9%
Year ending April, 1922	229	6,993	3.3%

The most interesting fact conveyed by these figures is that in times of normal employment, upwards of ten per cent. of the families in receipt of public outdoor relief are in need because of desertion on the part of the husband and father. Also a marked increase in the number is shown in the past two years, which is accounted for in part by the fact that during the period of depression many persons come upon public relief funds who in normal times would be self supporting or could be cared for by private funds.

The direct cost to the City of Toronto of relief to these deserted families can be conservatively estimated. The average cost per family is $45.31. Desertion being a more permanent cause of destitution than most others, the deserted families must certainly have cost more than the average rate. Therefore, 229 families at $45.31 per family per annum yields a cost which is obviously below the truth, namely $10,375.00 a year.

The number of families upon which social work was actually done by the family staff of the Department of Public Health Welfare Branch in October, 1922, was 156, of which 16 or 10.3% were desertion cases. The worker on cases involving indoor relief handled 73 families of which 31, or 43%, were desertion cases.

The number of families on the books of the Neighborhood Workers' Association in November, 1922, was 2,359, of which 80 or 3.4% were desertion cases. However, if the whole year ending in April last be considerd, the percentage of desertion cases is much higher, namely 303 in a total of 4,057 or 7.5%.

Of 147 families given material relief in 1922 by the Family Welfare Board of the Jewish Philanthrophies of Toronto, 6 were desertion cases.

The analysis made by the Welfare Branch of reasons for admissions to the twelve children's institutions receiving city grants shows that of 1,578 children in these institutions during the year ending September 30th, 1922, 172 or 10.9% were there because of desertion by their father. It is conservatively estimated that the actual cost of maintenance of these children in Toronto amounts to not less than $31,000.00 a year. Of course this does not include those whose fathers were not married to their mothers.

The Toronto and York Patriotic Fund states that without question they pay out more money because of family desertion than for any other cause. Of 250 permanent support cases on their books at the present time 86 are desertion cases which figures to 34.4 per cent.

The Soldiers' Aid Commission figures for the City of Toronto in the last six months show 1,640 cases handled in the Child Welfare Department, 50 of which (involving 120 children), were due to desertion. This gives a rate of 3.1%. Of 1,404 cases in the Adult Welfare Department in six months, 79 or 5.6% were applications for assistance because of desertion.

The number of persons charged in the Toronto Police Court with desertion in 1921 was only eleven, to which should be added 227 charged with neglecting to maintain their families. To understand that a much larger number were interviewed out of court by the Staff Department of the Police and some sort of arrangement attempted. During the year $27,227.00 was collected by that Department from men who have deserted their families.

The number of fathers charged in the Juvenile Court with non-support of their children is not available, but in ten months $10,195.00 has been collected from such fathers.

Unfortunately, it is impossible at present to even guess at the number of cases of juvenile delinquency arising in part at least from desertion by the father, but it is safe to say that if known the number would be startling and their direct cost in institutional care alone would command most serious consideration.

The Need—Enforcement of Paternal Responsibility.

In many respects the family problem in a case of desertion by the father is similar to that which arises when the father is removed by death. In such a case the financial difficulty is met by

the state by means of the Mothers' Allowance. The allowance does not extend to the deserted wife and children because of the fear of weakening paternal responsibility. If the welfare of such children is to receive a degree of attention approximating to that accorded to the chilrren of widows it is obvious that the only alternative is for the community to enforce the paternal responsibility about which it is so justly solicitous. Certainly our community has fallen far short of its duty in this matter, with the result that not only the integrity of the family and adult morals have suffered, but the physical, mental and moral well being of the thousands of helpless children concerned has been seriously affected.

Seriousness already Recognized in Law.

The state has recognized in legislation the responsibility of the father and the social importance of enforcing this responsibility. The process has been a gradual one, but it would seem that the strongest possible recognition of this principle has been given when family desertion was at last made an extradictable offence by treaty with the United States. However, for various reasons this principle, which seems to have been accepted in our legislation, has not found reasonable expression in effective official action. The actual application has been almost a joke.

The Criminal Code has made non-support a punishable offence, and provincial legislation has provided a means of compelling the deserter, husband and father, to pay for the maintenance of his wife and children. The chief difficulty arises in the enforcement of these laws.

The Present Inadequacy.

The following cases illustrate most of the shortcomings of our community's handling of this matter.

(Case A)—The first case exemplified, the almost insuperable obstacles in the way of bringing a deserting husband back from another city. A man deserted his wife and fled to another municipality. A social agency ascertained his whereabouts and applied to the police to have him brought back to Toronto to stand trial. The agency was informed that unless it paid all expenses involved in bringing the man back nothing whatever could be done. It was explained that such expenses are provided out of public funds only in case of an indictable offence, and that the only indictable offence that could be charged would be that of violating Sec. 242 of the

Criminal Code. This would require that actual injury to the health of the wife and children be proved, which was absolutely impossible in this as in nearly every other case. The only charges that could be proved were the violation of either Sec. 242A, which requires only that the wife and children be in a destitute condition, or the Provincial Maintenance of Deserted Wives and Children's Act, neither of which are indictable offences. Therefore, public funds were not available to bring the man back.

It was further explained that even if the indictable charge were used, public funds would only be forthcoming in case a conviction were obtained, which made it necessary in any case for some interested party to put up the money to meet the necessary expenses before any action could be taken. Obviously this is extremely difficult for most social agencies to do and by definition it is quite impossible for the wife, whose legal complaint is that she has been left in a destitute condition.

The social agency in question was unable to provide the necessary money, nor did it feel that it should be called upon to pay the cost of enforcing a law enacted by the sovereign power of the state. Therefore the man remained at liberty until some other person of means happened to lay a charge of theft of an automobile, whereupon he was apprehended and brought back to Toronto without delay.

(Case B)—A second case illustrates the futility of the official action that sometimes nullifies the heroic efforts of the social agency in the rare cases in which a deserter is actually brought back. A man who was already under court order to pay a weekly sum to a deserted wife and seven children, and who had skipped out of town without a single payment, was located after three months by a social agency, and through its efforts was brought back to Toronto for trial. A clear case was made against him, and it was shown that while he had been earning $40.00 a week, his wife and children had cost the municipality in public relief upwards of $638.00, in addition to miscellaneous assistance from private sources. To the surprise of the social agency concerned the Crown took the attitude that to imprison the man would serve no useful purpose, but would merely add another person for the municipality to support, and that the man should be encouraged to leave the city at once. Whereupon the court let the man go on suspended sentence, and he left the city the same day. He immediately changed his address and his job and has not contributed a copper to the support of his family since.

The result is that, in spite of the efforts and sacrifices of the

social agency in finally obtaining a conviction, absolutely nothing was accomplished in the direction of enforcing the responsiblity of this particular man to his family or of fathers in general to theirs. On the contrary, cases such as these cited above have brought the law into contempt, and have encouraged delinquent husbands and fathers to evade their responsibilities in the knowledge that no real pnalties may be expected to follow.

Recommendations.

Bringing Deserters Back.

We are convinced that the social importance and the peculiarly impoverishing character of the offence make it imperative that every facility be provided by the state to insure the carrying out of the intent of the law. We are further convinced that the administration of justice, especially in criminal cases of sufficient public importance to be made extradictable, should not depend upon the ability of the injured person to pay for it. Certainly, when the complainant must prove destitution it is absurd to make the enforcement of the law depend upon her paying the costs incurred. We would, therefore, respectfully recommend that Schedule C of the Administration of Justice Expenses Account Act, Chap. 96, R. S. O. 1914, as amended in Chap. 25, 1918, be altered to make the schedule of costs payable by the Province apply to Section 242A of the Criminal Code, and Chap. 57 of the Statutes of Ontario, 1922, in addition to the indictable offences as at present provided. We would further recommend that this Schedule be made to apply in such cases whether or not the conviction is finally obtained. Unless this change is made, it appears that some interested party will always have to advance the necessary costs in order to get action from the police. We are of the opinion that a satisfactory safeguard against expenditures on insufficient grounds is to be found in the fact that the issuance of the warrant is in the discretion of a magistrate and the provision of expenses is properly dependent thereon.

(2) *Disposal of Desertion Cases.*

We believe that every effort should be made to insure the vigorous and effective handling of such cases when the man has been brought back. It should not be possible for the crown to maintain that to imprison such an offender would merely add another to the number of persons to be supported by the state. When extra mural

employment was suggested in court it should not have been possible for the crown to say that it knew nothing of this type of incarceration. We are convinced that extra mural employment of prisoners with their earnings going to their wives and children should be extended and strengthened, and this kind of treatment is peculiarly adapted to cases of desertion.

Minor Recommendations.

In conclusion, we would respectfully urge a number of minor changes in the Provincial Deserted Wives and Children's Act, most of which have been embodied in a bill which, we understand, is to be submitted by Mr. McNamara.

(1) We would recommend that "adultery" and "venereal disease" on the part of the husband be added to the reason that would entitle a married woman living apart from her husband to be deemed deserted because these are entirely legitimate reasons for separation and would entitle the wife to a Judicial separation with alimony if the financial status of the parties were such as to justify such an application. In effect, the Deserted Wives and Children's Maintenance Act is the poor wife's substitute for alimony. The English law specifically mentions venereal disease and adultery.

(2) We would recommend that the summons be returnable in the same manner as any other summons in order that confusion be avoided, both in the minds of the accused and in the calendars of the courts. This purely technical recommendation arises from the experience of those engaged in enforcing the law.

(3) We believe that the complainant should have the same right to reopen a case as the husband or father, and, therefore, would recommend that section eight (8) be amended to read as follows:

"A summons under this Act shall be applied for, granted, and served in the same manner as a summons in a case of assault, or in such other manner as the magistrate directs, and a magistrate may at any time rehear the application at the instance of the husband or father after notice to the wife or child or at the instance of the wife or child or other person authorized by section four (4) to lay a complaint under this Act after notice to the husband or father, and may confirm, rescind or vary any order made thereon as he may deem just." (The words "or other person authorized by section 4 to lay a complaint under this Act" are in addition to the amendment proposed by Mr. McNamara.)

(4) We are convinced that a summons is not sufficient in dealing with all cases that may come under this Act. Experience has shown that often a summons would be useless, as the man would immediately disappear. The fact is, that the practice has actually been to use a warrant when, in the judgment of the magistrate such was desirable. We would strongly recommend that the law be brought into conformity with the practice by inserting a covering clause to the effect that a magistrate may, at his discretion, issue a warrant in lieu of a summons.

News Notes

The Social Hygiene campaign inaugurated in January by the Canadian Social Hygiene Council, under the auspices of the Department of Health of the Province of New Brunswick, proved to be an unqualified success. Four speakers co-operated in presenting the case: Dr. J. J. Heagerty of the Federal Department of Health, Mrs. Emmeline Pankhurst and Dr. Gordon Bates of the Canadian Social Hygiene Council, and Dr. J. A. McCarthy of the Department of Health of the Province of New Brunswick. The result of this combined presentation was that the various points of view were adequately represented and that audineces received an adequate impression both of the broad significance of the problem and of the necessity for enlisting both official and voluntary co-operation in the campaign.

The speakers travelled almost continuously for two weeks, spoke in every part of New Brunswick and met with a cordial and enthusiastic reception everywhere. The audiences were large. As a matter of fact in many places hundreds of people were turned away. Most important of all new branches of the Social Hygiene Council were formed in about a dozen centres. This will mean that the work will not stop at initial treatment but that community organization will proceed. Dr. Roberts is as usual to be congratulated on his vision and foresight. The series of meetings just completed is probably the most successful series of public health meetings ever held in Canada. It is hoped that a more detailed description of the campaign will appear in an early number of the PUBLIC HEALTH JOURNAL.

R. B. McCauley of Sault Ste. Marie has been appointed Sanitary Inspector of the Provincial Board of Health of Ontario to succeed James Taylor, deceased.

Dr. N. H. Sutton, Peterborough, has been appointed District Officer of Health for District No. 4 under the Ontario Provincial Board of Health to succeed Dr. George Clinton, superannuated. Dr. Sutton was overseas and is a graduate of the University of Toronto.

The Toronto Committee for Mental Hygiene is preparing a pamphlet entitled "The Problem of Feeble-Mindedness in Toronto." Important facts are presented, together with recommendations for the creation of more adequate facilities for the mental defectives of the city. The following quotation will be of interest to readers of THE PUBLIC HEALTH JOURNAL:

"There are more than 3,000 feeble-minded in the city of Toronto who require special methods of education and of care. Studies conducted in other cities throughout the continent show that the proportion of the feeble-minded to the general population is similar to findings in Toronto, and, that it is necessary to institute measures that will act as safeguards to the general community. Among the 3,000 who can be designated as feeble-minded, are idiots, imbeciles and morons. As a rule, idiots and imbeciles are easily recognized as possessing inferior intelligence. Their general appearance is that of helplessness and inferiority, but it is a mistake to consider them the more serious end of the problem of mental deficiency. The morons, or higher grade types are more numerous, and, while not so easily diagnosed may constitute a serious menace to the moral and physical health of the community. They are often attractive in appearance, but possess only the minds of children, and do not develop the restraints and inhibitions that come with normal adult life.

"The relationship that exists between mental defect and various social problems, is worthy of consideration.

MENTAL DEFECT AND POVERTY.

"The most hopeless and difficult cases of poverty that come to the notice of the social agencies of Toronto are frequently due to mental deficiency. It is not unusual for a social worker to encounter conditions such as the following,—Family A is in a state of destitution. The house is dirty and unkempt; the children half-naked and uncared for; the house without fuel or food. The family has attracted the interest and sympathy of a kind-hearted citizen who, with commendable zeal, has attempted to remedy the unfortunate condition. Clothing has been purchased, food sent in, fuel supplied, and the family put on a new footing. The relief measures fail, however, and the old situation of destitution and want soon returns. An investigation shows that the father and mother are both feeble-minded; that five of the children are mentally deficient, and that a baby has recently died through lack of intelligent care. It is

evident to the social worker that ordinary relief measures are useless for such a family as this.

"When one encounters, repeatedly, conditions such as are described above, it becomes apparent that greater facilities are needed in Toronto to cope with the problem of feeble-mindedness.

Mental Defect and Illegitimacy.

"It is estimated that there are between 700 and 800 illegitimate children born in the city of Toronto each year, and, that from 40 to 50% of the mothers of these children are mentally deficient. A considerable proportion of the children are feeble-minded, and thus, each year the problem of mental deficiency is augmented. In a series of over 500 cases of unmarried mothers receiving care at the Toronto General Hospital, 88% were abnormal mentally and 10% were infected with venereal disease. Some had more than one child born out of wedlock, and indeed, one had no less than five illegitimate children.

"Although the findings at the Toronto General Hospital do not necessarily apply to all the unmarried mothers in Toronto, it is, nevertheless, evident that the problem of illegitimacy can never be solved unless mental defect is taken into considration."

The Provincial Board of Health of Ontario

COMMUNICABLE DISEASES REPORTED FOR THE PROVINCE FOR THE MONTH OF JANUARY, 1923.

COMPARATIVE TABLE.

	1923		1922	
Diseases	Cases	Deaths	Cases	Deaths
Smallpox	43	0	170	0
Scarlet Fever	368	10	518	14
Diphtheria	236	25	486	54
Measles	331	4	205	3
Whooping Cough	376	14	89	5
Typhoid	59	10	28	5
Tuberculosis	169	117	160	151
Infantile Paralysis	2	1	2	0
Cerebro-spinal Meningitis	6	5	7	6
Influenza	115	39	—	—
Influenzal Pneumonia	.....	18	.....	31
Primary Pneumonia	—	362	—	288
Syphilis	147	—	183	—
Gonorrhoea	160	.....	195	.....
Chancroid	3	—	1	—

Book Reviews

"An Introduction to the Practice of Preventive Medicine," by J. G. Fitzgerald, M.D., F.R.S.C., assisted by Peter Gillespie, M.Sc., C.E. M.E.I.C., and H. M. Lancaster, B.A., Sc., and chapters by Andrew Hunter, M.A., M.B., F.R.S.C.; J. G. Cunningham, B.A., M.B., D.P.H., and R. M. Hutton, with appendix articles by various contributors. Published by C. V. Mosly Company, price $7.50.

The introductory chapter of this excellent work is a clear presentation of the aims and problems of preventive medicine. The author's expression of the place of the general practitioner in the field is well worthy of note as is also the statement comparing educational and health services.

The author's discussion of communicable diseases, developed in each case on a scheme embracing Incidence, Etiology, Modes of Transmission and Methods of Control, is exceptionally complete and is the best presentation we have had the privilege of reading. Simplicity and clearness of language enhance a scientific presentation. Printed separately these chapters would provide an excellent handbook on the communicable diseases.

The chapter on Diphtheria impresses one with its conservative viewpoint, yet the problems that arise daily in dealing with the disease are emphasized and a definite outline of procedure is given, both for the treatment of the patient and the supervision of contacts.

Similar care is shown in dealing with the other communicable diseases.

One wonders a little, in view of the fact that the book is called "An Introduction" if it would not have been better to leave the detailed discussion of the chemistry and bacteriology of Milk and Water, to text books on the subjects concerned and emphasize briefly the prevention of the spread of disease by these agencies.

The chapter on Domestic and Community Sanitation is open to the same criticism, while one could wish that the problems of rural hygiene and the solution of those problems had been given greater consideration.

The chapter on Diet, Dietary Defects and Deficiency Diseases contributed by Andrew Hunter is a careful, concise summary of present day knowledge of this important subject.

Rather much space is given to charts and statistics in the

chapter on Maternal and Infant mortality, but the last section of the chapter is an excellent presentation of this subject.

The chapter on Public Health Organization has a particular value giving as it does the only complete outline of Canadian Health Organization, Federal, Provincial and Municipal that has been published to date.

Other chapters on air and ventilation, Industrial Hygiene, Vital Statistics and Voluntary Agencies, are clear and concise, and the individual papers that make up the appendix, are a valuable addition to the book.

It is extremely well printed and profusely illustrated with charts, tables and diagrams. This very profusion of charts and tables has added much to the cost, which unfortunately may be too high for the medical student for whom the book is primarily intended. In some cases as in Tables XVI, XVII and XVIII, each occupying almost an entire page, the combining of these into one table would in no way lessen their value.

The book is one that will be generally read and appreciated by the physician and health worker, more especially by Canadians who will appreciate the Canadian atmosphere of the text, and will feel with us that the writer is to be congratulated on this authoritative addition to our medical literature.

H. C. C. A. G. F.

Editorial

EDUCATION.

It is a curious adherence to the conventional which makes people believe that the constituted authorities are the one source from which their children receive the enlightenment which guides them along the pathways of practical life. Humans are prone to believe what they are told if it is repeated often enough. The schoolmaster is the main source of knowledge. His books are a valuable adjunct his rod—erstwhile at least—a chastening and salutory and commendable influence indeed. All of this must be true. We've heard it and read about it on innumerable occasions. It is true. This, added to or subtracted from to suit one's station, the inclination of parents and the docility or otherwise of the unfortunate student is education itself.

As a matter of fact it is nothing of the sort. Education is a medley of all sorts of things in which schoolmaster and schoolmistress, fathers and mothers, sisters, cousins and aunts and lesser companions, movies, books, football, work and thosuand other influences play their part. The ultimate result of it all may be a happy or an unhappy individual, a useful or a useless citizen, a stunted or a well developed human animal, and unfortunately constantly operating influences which we have neglected to regard as educational make it impossible to avoid developing citizens of every variety, good and bad.

When the authorities in charge of education, legislators and people generally realize the possible baneful influence of the movie or the immoral novel or magazine so common on our bookstands—the effect of the absence of good recreation or the lack of understanding of what good recreation is, the damage which may result from a badly chosen life-work and the seriousness of the lack of a formal education making for good normal citizenship rather than mere money making capacity—we will probably begin to develop an educational programme of a sane character. At present we are floundering. By realizing the number of our social misfits and taking our lessons from them we may some day soon see light ahead. When we do it will mean a new and greater and more humane conception of educational possibilities than ever before.

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PUBLIC HEALTH IN NEW BRUNSWICK.

The Social Hygiene campaign just completed in New Brunswick provides another example of the fact that the Hon. Dr. Roberts understands the essentials of public health education. Two speakers for the Canadian Social Hygiene Council, one from the Dominion Department of Health and one from the New Brunswick Department travelled almost continuously for two weeks, addressed meetings in every part of the province and left behind a round dozen new branches of the Canadian Social Hygiene Council.

The meetings were crowded—indeed the last meeting held in the Imperial Theatre in St. John was said to be one of the greatest if not the greatest ever held in that city. Press support both from the editorials and news standpoint was all that could be desired. The immediate result is that thousands of people have been interested in social hygiene. It is to be hoped that the ultimate result will be much more than this as after all propaganda without follow up is of little value. If groups of citizens get together in the various parts of New Brunswick where meetings were held with the idea of creating permanent organization which will function as active parts of the reorganized New Brunswick Social Hygiene Council the results of the campaign will be far reaching and permanent. Under the old regime the public health officer did all the work. In the new era he will work hard enough it is true, but the education which he promotes must be with the idea of making the people work out many social and family problems for themselves and this is particularly applicable to the problem whose solution will lead to Social Hygiene.

The Public Health Journal

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Community Responsibility With Regard to Tuberculosis

Read before the Union of Nova Scotia Municipalities at their 17th Annual Convention, Kentville, N.S., August 31st, 1922. By Dr. A. F. Miller, Medical Superintendent of the Nova Scotia Sanatorium, Kentville.

I HAVE no doubt the majority of you are familiar with the tuberculosis situation in Nova Scotia, but, although our mortality findings have been brought before you on many occasions in the past, I will crave your indulgence this morning if I bring them before you again, so that you may see from these graphic charts the death rate from tuberculous disease in this province.

The first diagram indicates this varying death rate in Nova Scotia for the past ten years, that is, those who have died from all forms of tuberculosis.

In 1912, 900 people died. That is a rate of 183 for every hundred thousand of the population. In 1913, 885 people died, or 176 per hundred thousand of the living. And so on down through the other years until 1921, when 725 people died, or 138 per hundred thousand of the living. The total number of deaths from tuberculosis in our little province during those ten years was 8,564, What does this mean to us?

Aside from the grief and suffering and the other losses entailed in sickness and death, the actual money loss to the province from the wiping out of these lives is great, and will surely interest you. As you may know, death from tuberculosis occurs most often in the working period of life, its highest percentage being between the ages of twenty and thirty, when one-third of all deaths are from this cause. The average age at death of those who die of tuberculosis, is for males 37 years, for females 33 years. Each of these deaths cuts life short on the average 29 years for males and 24 years for females. The money loss from each death is computed somewhat as follows:

First, a period of partial disability, one and a half years, during which the patient is supposed to earn half his former earnings.

TUBERCULOSIS IN NOVA SCOTIA DEATH RATE PER 100,000 OF POPULATION.

Year. Rate.	No. of Deaths.
1912—183	900
1913—176	885
1914—183	910
1915—182	915
1916—181	876
1917—169	862
1918—165	860
1919—169	867
1920—148	765
1921—138	725

WHAT SHALL WE DO ABOUT IT?

TUBERCULOSIS DEATH RATE PER 100,000 OF POPULATION PROVINCES OF CANADA, 1921.

P. E. Island	143
Nova Scotia	138
Quebec	123
New Brunswick	104
British Columbia	76
Ontario	71
Manitoba	69
Alberta	52
Saskatchewan	43

Second, a period of total disability preceding death, during which time the patient earns nothing toward his own support. And third, we must add the cost of medical attendance, nursing, medicines, etc. The total of these three items exceeds $2,400 in each instance. In addition, we must consider what we call the capitalized value of the earnings lost in the case of each death, that is, what the patient would have earned had he not developed tuberculosis. He would probably have lived 24 years longer, and his earnings during this productive period are estimated at $7,900 for each person.. We could therefore estimate a total money loss to the state of $10,000 in the case of each death. Statisticians tell us that the *very least* at which we can reckon the average cost in actual money of one death from tuberculosis is $8,000. Last year 725 people died in Nova Scotia from this disease. The total money loss to the province, therefore, was at least $5,800,000 for the year 1921 alone. And at this lowest estimate our 8,564 deaths in the past 10 years have meant a loss of $65,000,000.

Let us now compare the death rate from tuberculosis in Nova Scotia with that in the other Provinces of Canada. I have taken the figures from the last Federal census, 1921. This second diagram graphically shows you that in Prince Edward Island 143, in Nova Scotia 138, in Quebec 123 people for every hundred thousand of the living, died from tuberculosis last year. In New Brunswick 104, in British Columbia 76, in Ontario 71, in Manitoba 69, in Alberta 52, in Saskatchewan 43. So you see, that Nova Scotia stands as a close second to the worst in the list. People as well known for intelligence as Nova Scotians should surely be looking carefully into the reasons for this. There *must be* reasons, and nothing can be more worthy of study, investigation and sharp questioning than this matter of our people's health. We recognize that there has been a perceptible fall in the mortality rate in Nova Scotia in the past few years, but it is still exceedingly high, and why this should be it is difficult to say. Nova Scotia, as you well know, is surpassed by none of the provinces of Canada in its natural and varied beauty, its wealth of minerals, fisheries and lumber, its industrial activities, its fertile farm lands, and in its homes where prosperous families live in comparative comfort. No great poverty is to be found in this province, no overcrowding as in the slums of great cities. It has no extremes of climate, and is a land, as has well been said, without tempest, drought, or pestilence.

As to the racial factor, the population of Nova Scotia is not made up of any of those races which are known to be susceptible to

tuberculous disease. For example, in the coloured race the death rate from tuberculosis is twice as great as it is among the whites; but negroes make up only a very small proportion of the population of this province. The Irish is another race which appears to suffer heavily from the ravages of tuberculosis, but they, too, are not in any great numbers throughout Nova Scotia. The English, Scotch and French stock, of which our population is chiefly made up, enjoy a well-marked degree of immunity to tuberculosis, and their mortality rate from this disease is much less than that of the other races, with the exception of the Jewish. We cannot, therefore, attribute our high mortality rate in Nova Scotia to any racial element.

As to the general condition and habits of our people, such factors as poverty, mal-nutrition, alcoholism, improper methods of living and working, are not more common in our province than in other parts of Canada. Why should the death rate, say, in Ontario, be 71, while ours is 138 per hundred thousand, when conditions in these two provinces are so nearly alike? Have you men and women ever tried to think this question out for yourselves? As for me, I have been thinking about it for years, and I can only conjecture. The only explanation I can find is that in Nova Scotia we have not kept pace in thought and in action with those communities that have made a determined effort to wipe out this terrible and unnecessary scourge.

Here I see gathered in this audience a group of some of the most representative men of our Province, who have come here not only to see this beautiful Valley, but to gather in conference upon matters pertaining to the public good, the business of community life. You cannot fail to see the bigness, the immediate importance of this matter in which you have already shown an interest by asking me to come here and talk to you. It is not necessary for me to remark that the greatest asset a country can have is a healthy and industrious people. Any community that neglects to provide adequate and efficient health legislation to safeguard the health and prolong the life of its citizens, is only storing up expense and trouble for itself in the future. It is not practising good economy. It is not saving money. It is wasting.

Let me tell you, as an example of what can be done, and at moderate expense, what has been accomplished in Framingham, Massachusetts. Five years ago the Metropolitan Life Insurance Company offered the National Tuberculosis Association of the United States a gift of $100,000 to be expended in a Health Survey and demonstration covering a period of three years, in some average American

community. At the end of three years, I may explain, the demonstration was continued, so that at present we have their report for five years.

Framingham, an industrial town of 16,000 population, was selected. The object was to bring under observation all of the tuberculosis in the community, to apply the best known methods of treatment, to develop a thoroughgoing and comprehensive programme of prevention, to organize effectually the various resources of the community itself for tuberculosis control and the promotion of health. Only a few of its activities can be mentioned here. These include:

A sanitary survey of school and factory conditions, milk and food control and general sanitation; gathering of morbidity and mortality statistics; a census of all individuals regarding matters of hygiene, housing, economic status, etc.; a survey of tuberculosis infection among cattle supplying milk to Framingham; an expert medical examination campaign in which over three-quarters of the population of the town was examined; a thorough organization of treatment and after-care for the sick, and of preventive aid for those below par physically.

It is interesting to note that one per cent. of the population was found to have active tuberculosis, and one per cent. more to have the disease latent or arrested, and that there was a prevalence of illness and disability of all types, of 77%. It was also discovered that, instead of the ratio of three cases of disease among the living for every known death, which was formerly accepted as existing, there were actually nine or ten of the living diseased to every recorded death from tuberculosis.

The report of the results of this remarkably successful health demonstration prove that tuberculosis as a cause of illness is apparently being brought under control in that community. This is shown in the decreasing number of advanced cases discovered, and in the remarkable decline in the death rate, which, at the beginning of the demonstration was 121, and last year was 40, that is, of course, per hundred thousand. This is a reduction of 67 *per cent. in five years*. So much for Framingham.

And now, what about Nova Scotia? What means have *we* for the discovery of cases of tuberculosis, and for the care and supervision of these patients when discovered? It is true that our county clinics are doing admirable work, but they have not been long enough in operation for us to find out the extent of their possible usefulness. It must not be forgotten that in addition to the inspec-

tion and instruction of school children, which is a very good and necessary part of their work, the Public Health Nurses must find time to supervise with considerable thoroughness the home care of all tuberculosis cases not being treated in institutions. We all realize that not more than 10 to 20 per cent. of patients known to have tuberculosis will ever be treated in institutions. Since this is so, efforts must be made to create an efficient out-patient department of the clinic service, so that those who cannot or will not come to a sanatorium for treatment may be properly cared for in their own homes.

And what institutional provision have we in Nova Scotia for our tuberculous sick? Last year we had 725 deaths. This means that we must estimate about 4,000 patients in this province at present requiring care. Our total sanatorium and hospital accommodation for consumptives is about 350 beds. This is far from sufficient. There should be in Nova Scotia at least one bed for every known death, or 725 beds in all.

I have said that 725 persons died last year from tuberculosis, and that for every death we should find at least five, if not nine or ten, active cases of the disease among the living, which should be under observation and treatment. But does this condition actually exist in Nova Scotia, or is it possibly even worse than that? The findings in the town of Framingham and in other places where an intensive survey has been carried out lead me to believe that, with the high death rate we have in Nova Scotia, these figures would not be an over-rating, but we ought to *know for ourselves;* we ought to find out definitely the actual situation in this province. So far, no organized attempt, outside of what has been done in Antigonish and Guysboro has been made to secure this information of which we are sadly in need. Registration of known cases of tuberculosis, although this measure is called for by law in the province, is woefully neglected, and we cannot expect to get accurate information from this source. In the meantime, no adequate measures to deal with conditions can be taken until we know just where we stand in this matter.

While it may not be possible at present to carry out such a comprehensive programme as that conducted at Framingham for the whole of Nova Scotia, it *is* within our means and powers to carry on a somewhat similar demonstration in a *given limited area* within our province, say one county. This county should, for demonstration purposes, include several towns as well as typical rural districts of not more than average prosperity. It should

provide communities representative of industrial, mining, farming, inland and sea shore conditions. It will probably occur to you, as it has to us, who have studied the situation, that for this purpose we cannot find a better area than the county of Pictou, which offers a unique example of differing and representative conditions, with its cluster of towns, having the typical drawbacks of industrial centres, its larger and smaller country villages, its isolated rural districts. This county also presents most of the different geographical conditions to be found in Nova Scotia, sea shore, river basin, and inland. For this reason we think Pictou County would be a good selection for our experiment which, of course, is for the benefit of all Nova Scotia, an object lesson from which we shall learn what can be done and how to do it for the province as a whole.

The business mind of this audience will at once realize that to carry on such a survey successfully and with a maximum of benefit, we shall have to go about it in the most careful and thorough fashion. In the first place the movement will have to be popularized. No one can do people good against their will and wish. In the second place, for economy of time and labour and for efficiency in getting things done, we shall need the help of those who understand such work and have the mind and force to throw into it. This means, then, as our first step, *organization and advertising.* The organization must be in charge of the Provincial Department of Health who will be assisted by strong committees of individuals who are familiar with the industrial, social, and economic life of the county. As it is necessary to have the sympathetic co-operation and support of physicians, laymen, and local organizations, for the success of the demonstration, a publicity campaign will have to be carried on throughout the county. The acquainting of the people with the motives, methods and objects of the demonstration may be accomplished by addresses to public gatherings, instruction to school children, exhibition of Moving Picture Health films, distribution of pamphlets and posters, appropriate newspaper articles, etc. This work would be carried on by local committees selected from representative leaders in the county.

Our second step should be the *Health Survey* which should follow along three main lines, with two important branches: First, an inspection and weighing of all school children to discover those that are below standard weight, as we have learned that it is amongst these our cases of childhood tuberculosis or threatened tuberculosis will be found. These below-standard children will be

given further expert examination of the chest, nose and throat, to discover all cases of active tuberculosis and of latent or suspected tuberculosis, as well as those diseased conditions that are known to pre-dispose to this disease. I refer especially to bad nasal conditions, diseased tonsils and adenoids. This is where we hope to get at the real cause of the beginning of tuberculosis, as it is well known that tuberculous disease in the adult is a development of childhood infection. Second, examination of contacts, that is those who have been exposed to tuberculosis. For this purpose we should obtain the names and addresses of all families in the district in which there is a living case or has been a death of tuberculosis, and we must secure the consent of the heads of families to have all members of the household examined. This will bring to light many cases of unsuspected tuberculosis. Third, examination of Industrial Workers. This will mean securing the co-operation of employers and unions as well as the interest and consent of the workers, with the understanding that the results of the examinations will be kept strictly confidential between the workman and his physician. Hazardous employments, as you well know, predispose to respiratory diseases. Fourth, family and general examinations. It is to be hoped that almost all members of the community, especially those who feel themselves to be below par physically or who are suffering from any chronic respiratory troubles, will avail themselves of the opportunity to undergo expert examination. Fifth, Physicians' Consultation Service. This survey will provide the general practitioner with expert consultation service for any doubtful or suspected chest cases.

The third step should be *a Sanitary Survey.*

Under this head it is hoped that the Public Health Department will carry on a collateral investigation of, (a) City and rural sanitation. (b) Hygienic conditions in schools and factories. (c) Vital statistics of the county. (d) And an inspection of cattle and of the handling of dairy products.

This may sound to you as if calling for an alarming expenditure of money, but it is not really so. The intensive survey of a county such as I have described as an object lesson would not entail any tremendous outlay, and the necessary funds would, we hope, be raised by the Red Cross Society, the Canadian Tuberculosis Association, and other philanthropic organizations. Then, should the findings in this selected county be such—and they certainly will be such—that the other counties of the province desire a similar survey to be made, then why should not the Provincial Health Depart-

ment take charge of the whole work and put our province on a health footing which we shall be proud to compare with that of the other provinces of Canada?

Now I suppose, as practical men, you are thinking, "Having done all this examining and gathered all this data, what is going to come of it?" You are expecting me to get down to details, and tell you how to handle your local health problems. I may as well confess that I have no advice to offer unless you are prepared to spend time, money and energy. These, with the addition of information and education, are absolutely necessary to carry on any programme for the combating of disease. It would seem to go without saying that, when the first necessary step is taken, that is the discovery of cases of tuberculosis, the next duty is to have the patients properly cared for. There will be those who are hopelessly ill and who, for various reasons, should be removed from their homes, but might well be cared for in the hospitals near their homes. This would likely mean the building of an annex to the existing hospital in the county. Then there are those who should go to the Sanatorium for treatment and training. And there will be others who prefer to stay in their own homes, who must be supervised and when necessary, assisted in taking the cure there.

The best means yet devised to supplement the sanatorium and hospital and to bring medical service home to the people, is the County Clinic, with its facilities for expert examination, its trained Public Health Nurse who not only follows up the cases discovered and assists in their home treatment, but carries on the observation of school children and of contacts in the homes, thus assisting in the discovery of new cases of the disease. In other words the Clinic and the Public Health Nurse continue the work begun by the Survey. The Nurse's salary and expenses as well as the cost of necessary Relief Work for those who are in need of aid must be met by the Municipality.

The fact should not be lost sight of that in any and every case, the Provincial Treasury pays from one-half to two-thirds of the cost of keeping a patient at the Sanatorium, and that the comparatively small sum of $7.50 per week for pavilion patients and $10.00 for Infirmary patients, is the balance required to meet the total expense in each case.

As to provision for the needy tuberculous, this is one of the outstanding and immediate demands upon the community, that is, the municipality. At the Nova Scotia Sanatorium we have recently had several cases of urgent need of sanatorium treatment for

patients who could no longer pay for themselves or who could not come to us at all; some cases in which the patient, with open, infective disease, was forced to go home and sleep in a room with little children. You may think that, whenever there is real need and the municipality is applied to, there could be but one reply, as a matter of good business economy as well as for humanity's sake. But I can assure you that it is not always so. While there are some municipalities that will, there are others that will not accept this responsibility and pay for institutional treatment for those who need it, even on the urgent advice of the Sanatorium physician. It is a few cases of this kind that make us wish, at times, for legislation to compel municipalities to pay their one-third or one-half of the expense, or whatever proportion of this the patient is unable to pay.

Returning for a moment to our first chart, it is encouraging to note that in Nova Scotia there has been a distinct fall in the death rate for the past two years. There has been a total decrease of 19.4 per cent. in the yearly number of deaths in Nova Scotia in the past ten years, but in the first eight of these years, the decrease was only 3.6 per cent., while in the past two years it has been 16.4 per cent. (See figures at right of Chart No. 1). And we may surely venture to attribute this decrease, in some measure at least, to the education of the people through the Public Health Workers and to the fact that your institution at Kentville has not only been able to treat twelve times as many persons since 1917 as it could before, but that it has been for sixteen years sending out patients somewhat trained and instructed regarding tuberculosis. These ex-patients, "graduates" of the Sanatorium, now number 641 known to be living. (This is exclusive of our military ex-patients who number over a thousand.) This small army of interested persons, most of them examples of recovery from tuberculosis, must have a wide-spread influence, both by noticing early symptoms in others and by educating their neighbours in healthful habits of living.

To sum up briefly what we must consider as community responsibility with regard to tuberculosis, I would say:

1st. Make municipal provision for your needy tuberculosis at the Sanatorium, if possible, or if not, under adequate and proper supervision of your County Health Nurse, or in a local hospital.

2nd. Push your Provincial Government to the appointment of a full-time expert tuberculosis examiner for the County Clinics.

3rd. Back up in every way the work of your County Clinics and of the nurses; attending faithfully to sanitary conditions in

homes, schools and work-places, and to the care of undernourished children and the correction of such defects as tend to lead to respiratory disease.

4th. Have an intensive Health Survey in your municipality as soon as possible, to discover your cases of tuberculosis needing treatment and to find out exactly what health conditions are in your community.

If this appears to be a big programme, I can only say that I noticed, when I looked over your agenda for this convention, that it also is a big programme. I mean it is wide in its outlook and ambitious in its scope. Your ideas are those of men and women who want to have everything the very best that it can be made. But what is the beautifying of municipalities or the improvement of highways if you are too sick to enjoy it? In short, health is at the root of any enjoyment and success in life. The tuberculosis problem is only of interest to you as a tale that is told, unless, indeed, it has struck at your own family. It is people like myself, who are continually brought face to face with individual tragedy, who feel the urgent need of immediate action on the part of the public.

I am sure that, if all the influence represented by the Municipal Officers of Nova Scotia were exerted persistently and in a business-like way along these lines, this province would reap splendid results in the health of its people, the great fundamental of happiness and prosperity.

Some Clinical Aspects of Industrial Poisoning

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DURING the year 1921-2 the Division of Industrial Hygiene of the Provincial Board of Health investigated the dangers to health of workmen arising from substances of a chemical character with which they come into contact during their industrial employment. From this survey, certain observations have been made which may be of interest to those physicians who include industrial cases in their practice. Only a few of the numerous chemicals can be considered in the length of time allowed, and those will be chosen which are used in the Toronto district. Where possible early points in diagnosis will be pointed out.

The pathological effects of lead in numerous trades have been harped upon so often and so much as to have lost general interest, yet in industrial centres it continues to exist as a serious menace to the health of many.

The industry in which lead poisoning may exist as a pure or unmixed risk is in the manufacture of storage batteries. We have in Toronto three main plants engaged in this work. The risks vary, for in two plants no lead mixing is done, but in all polishing and assembling of lead plates take place. A few workmen may be exposed also to acid fumes and to arseniuretted hydrogen in the charging room, but the general risk is from lead. Fifty-five men were examined and air samples were taken to find the amount of lead present in the air breathed. Legge and Goadby[1] have shown that where the air of workrooms does not contain more than 5 mgms. of lead per 10 cubic meters, cases of paralysis would never, and cases of colic would seldom occur. Only near the saws and the buffing or polishing machines was lead in dangerous amounts found. Yet in assembling plates three cases of lead absorption were found and two gave a past history suspicious of lead poisoning. One man after 1½ months assembling was losing weight, had constipation and headache, frequently felt "punk and drowsy" to

use his own words, and had marked tremor of the hands. One after eight months had constipation and a blue line in the gums. Another after 15 months, had a well marked blue line in the gums but no other signs nor symptoms. This man was a case of lead absorption, but the balance between intake and output of lead had not been sufficiently disturbed to give him symptoms. Intercurrent disease, such as an attack of influenza, might easily upset the balance. One workman engaged in sawing plates, after four months was laid up with constipation and colic and had a blue line in the gums. He is now in the moulding room, feels perfectly well but still has the blue line. In the one factory where lead pasting is done, two mixers have a blue line on the teeth but none on the gums. Great care is taken to protect these men by keeping down dust, by bathing and changing before leaving work, immediate care of cuts, injuries and ill health and no trouble has occurred. But a negro, whose work included cleaning up this pasting room, worked in a dusty atmosphere and had an attack of colic. Since examining these men last June, one man then employed has developed the symptoms of acute lead poisoning.

House painters and decorators are exposed to other chemicals than lead and those can do them just as much harm. I refer to turpentine, benzine, benzole, denatured alcohol and amyl preparations. It is now possible for a painter engaged on interior work to use no lead for years. And he now rarely if ever prepares his paints from the dry pigment stage, but starts from a paste of pigment and oil. This diminishes his risk from poisonous dust. But painters are critical and often contemptuous of the ready mixed and leadless turpentine-free paints used nowadays and a frequent statement is that the cheap grades of benzine-thinned paints are worse than any others in their effects. Of 132 painters examined, no case of acute or chronic plumbism was found. Thirteen cases gave a past history suspicious of lead poisoning, based on paralysis, or on colic with constipation and vomiting and headache. It is interesting to note that all but three of these cases had occurred 15 or more years ago and none since 5 years ago. Ready mixed and leadless paints became fairly common on the market 10-12 years ago.

There were 10 painters with complaints and physical findings enough to show that they were affected by the substances with which they worked. Diagnosis of lead poisoning was not made in any case. A few short case histories follow:

1. Age 33. Time spent at the trade 17 years. Housepainting and decorating. No dry lead used. During past summer on outside painting using considerable amount of lead. Has a poor appetite which improves when not painting, morning anorexia, bad taste in mouth, occasional colicy pains in abdomen, purgatives needed at intervals, subject to colds frequently, has morning expectoration of yellow phelgm less during day, has headaches while using flat paint, has had pain in urinating, has frequency of urination after using turpentine, has had pain in right shoulder for a year, is nervous especially now on scaffold work, and has had a poor memory and weak eyes since serving overseas; where turpentine is strong, he has occasional heavy feeling, grogginess, drowsiness, slight dizziness, and choking sensations, he becomes quite dizzy on going to fresh air even if no previous symptoms. Physical examination is negative. No basophile granules in red blood cells; urine is free from albumen and casts and no lead found.

2. Age 47. Time spent at the trade 20 years. Housepainting and decorating. Used dry lead in England for two years. Has done no lead work lately. Notices no difference in outside and inside painting in its effects upon him. He has a metallic bad taste in mouth, coated tongue, varying appetite, poor in morning, indigestion, bad breath, pyrrhoea and constipation. He has bronchitis nearly all the time. He is slightly distressed after climbing stairs, heart shows an extra beat at irregular intervals; he has to get up once per night for past three years; occasional pain when urinating, dark and bulging lids occasionally, specks before eyes after stooping, pain in the back after stooping, poorer memory, weakness in the right arm for past six to eight weeks; he has acne on face. BP 135-85. Hgl. normal; urine clear of albumen and casts; no erythrocytic basophilia. Enamelling in small rooms makes his eyes smart, gives him slight headache, and sometimes dizziness on reaching fresh air.

3. Age 47. Time spent at the trade 26 years. Housepainting —15 years in Canada—has mixed dry colors, has used a lot of lead.

Twenty years ago he had a spell of vomiting, constipation and abdominal pain for three weeks. He has a metallic taste in mouth, bad breath, pyrrhoea, few teeth. He has slight swelling of ankles at night, and breathlessness on climbing, has to get up once per night for sometime past; is nervous and shaky and unable to do scaffold work; is troubled with headaches and has tremor when working; BP 135-70. Hgl. 95%. Heart, lungs, urine and blood examination are negative.

4. Age 55. Time at trade 30 years. Housepainting. Complains of poor appetite, occasional pains after eating; diarrhoea at times; his eyelids are puffy and have been so at times before. His color is good. BP 150-95. Last year he was tired all the time with numbness and pains in back; he has pins and needles in his hands at night now; knuckles are swollen; cuts are slow to heal; he looks much older than his age. Flat paint smarts the eyes and makes him feel dizzy.

5. Age 52. Time at trade 30 years. Housepainting. He has poor appetite, is nauseated, vomits breakfast frequently; needs purgatives; has occasional dizziness and specks floating before eyes; doesn't dare to do scaffold work now. BP 145-85; Hgl. 100%; he has some stiff knuckles; has had pains in head for two or three years; has had inflamed eyelids at times; cuts on hands fester; he has had two attacks of dizziness and loss of memory on car going home after work. Flat paint makes him feel intoxicated in a very short time and causes smarting eyes, strong smelling urine with burning sensation and a dopey feeling next morning. Varnish has similar effects. Shellac makes him drunk. Benzine gives him "bumping" sensations in the region of his heart.

6. Age 53. Time at trade 39 years. House painter. Recently employed using a lot of white lead, turpentine and shellac, and had done some mixing but no sandpapering. For three weeks he did not feel well, with loss of appetite, some constipation and distension. Then followed an attack of constipation, distension (no abdominal rigidity), pain in lower part of abdomen, vomiting, pains in shoulder and elbow, severe headache, some delirium, general weakness and pallor. Albumen was present in the urine at first but soon cleared up. When examined two months later he was of fair color, mucous membranes of good color, fingers tremulous, arteries slightly hardened, BP 140-90. No albumen or lead found in the urine (patient was taking iodides too at the time urine was collected), no basophilic granules in the red blood cells, Hgl. 90%, red and white cell count normal. He had always taken precautions and had had no previous trouble except that shellacing made his eyes water and gave him a full head, and one time while flat painting in store windows he had to be carried out and was unfit for work for three days.

I said that the diagnosis of lead poisoning was not made in any case. Where the workman was exposed to several substances, each capable of producing signs and symptoms (and in many cases, the

same), there did not appear any reason for considering one substance as the cause.

These figures do not correspond to the figures quoted by United States investigators. Hayhurst[2] in 1913 found 70 of 100 painters showed evidence of chronic plumbism. In 1915 he found 50% of chronic plumbism and 26% of acute plumbism in the past. In 1918, Harris[3] found 40% of active cases of lead poisoning and 44% of these had lead in the urine as well as the clinical signs of plumbism. Are we dealing then with more careful workmen, not of foreign birth and with better home surroundings?

Something which will always cause varying statistics is the difference in opinon as to what constitutes lead poisoning. I have seen reports published where the diagnosis of lead poisoning has been made on the appearance of the lead worker alone. This would raise the rate of poisoning considerably. I have seen in the examination of house painters, men whose facial expression and pallor led me to expect lead poisoning but no corroborative evidence could be obtained. The pallor may have been due to inside work and not to the vasomotor effect of lead; the blood picture was normal.

Diagnosis also varies when made for prophylactic reasons and when made for clinical record or compensation. In guarding a workman from lead poisoning, and in protecting the employer from unnecessary compensation outlay, it is better to err on the safe side and remove the man from further exposure even on slight symptoms. Oliver[4] the English authority, says that if a lead worker shows an increasing distaste for food it is time to retire or suspend him from work for it is the earliest sign of resistance to lead being diminshed. Other symptoms which soon appear are a feeling of sickness, a tendency to vomit, obstinate constipation and a sense of tiredness out of all proportion to the amount of energy expended. These are unfortunately all subjective symptoms but, as compensation is not involved, a workman would gain nothing but a change of work (or none at all), by falsehood. It is dangerous to wait for the early objective signs such as the fixed anxious expression, pallor, wasting of subcutaneous fat and anaemia. The blue line on the gums may not develop if a man cleans his mouth and teeth; the basophilia in the erythrocytes are not always present and are not peculiar to lead poisoning alone; the presence of lead in the urine and faeces can only be shown after the tedious destruction of organic matter.

The diagnosis of lead poisoning for statistical or compensatory reasons must be more carefully made, for more is involved; for

example in the proposed prohibition of white lead in the painting industry, a careful estimation of the actual incidence of lead poisoning must be made or an injustice will be done to the industry. Linenthal[5] criticizes physicians for not making a diagnosis of lead poisoning on subjective symptoms alone. "A history of exposure to lead," he says, "Justifies the diagnosis of lead poisoning in patients presenting obscure symptoms which cannot otherwise be explained." The history of exposure is the all-important fact in his diagnosis of plumbism. Sternburg[6] bases chronic lead poisoning on a lead line; appearance and pallor. Laureck[7] diagnoses chronic lead poisoning when a previously healthy digestive system gives way to a chronic loss of appetite, more or less coated tongue, disagreeable sweetish taste, disagreeable breath, thirst, eructation of gas, inclination to vomit and general sense of fatigue, even if no lead line or lead anaemia are present.

But in all cases, one must be sure that lead is used, and it is folly to attribute all the ill health of lead workers to lead. Most lead workers in our industries are exposed to other risks as well. Great harm is done to the relations of employers and medical men if a diagnosis of a certain type of poisoning is made when a man is not exposed to that particular poison in his special line of work, even though it is commonly used in the trade. For example in the rubber trade a man may be exposed to one or more of at least nine poisons. Another point is to inquire into the conditions resulting in the poisoning to prevent new cases or recurrence of old cases. A woman, whose husband is a painter, developed lead poisoning recently; her poisoning was apparently not due to any carelessness on the part of the husband but to the fact that her house was recently painted and that she was exposed to a great deal of dust from sandpapering of paint.

Rubber workers use lead in compounding rubber, but cases of lead poisoning are rare in that trade now. Dust prevention, personal cleanliness and the small number of workers actually exposed keep the incidence low. But where care is not taken, poisoning occurs. One factory employing 1,200 persons, had 25 men handling lead salts. In one year they had four cases of lead poisoning in the compounding rooms and seven at the mixing mills; the factory had a very dusty compounding room and the mixing mills had no hoods nor exhaust.

Some men employed in spraying lead arsenate mixtures on trees for the Tussoc Moth had symptoms pointing to lead poisoning

in a mild degree. Only a few men in Toronto are exposed in this way.

The volatile bodies such as turpentine and benzine mentioned in connection with the painting trade are frequent sources of trouble. Of the 132 painters examined, 40 cases of acute intoxication from turpentine or benzine in flat paint were recorded (50% of all painters complaining of the effects of turpentine), also three cases of acute intoxication in shellacing, five from wood alcohol, five cases of benzine or "naphtha jags" and four from benzole or acetone in paint removers. In many cases, no attempt could be made to distinguish between the effects of the various volatile substances but a recent intoxication had usually several or all of the following symptoms: sudden weakness, irritation of eyes and throat, cough, difficulty in breathing, headache and dizziness, nausea and vomiting, and less commonly frequent and painful urination. Exposure to varying degrees of intoxication such as this must in time have a deleterious effect on the health and more so if to these is added a dangerous pigment containing lead. The painters examined, 132 in number, showed the following physical defects which may be taken as an index of the continued exposure: constipation 26, pyrrohoea 41, poor teeth 41, indigestion 7, inflamed throat 8, bronchitis 7, myocardial weakness 2, irregular heart 4, increased blood pressure (taking as an index the age + 100) 13, hardened arteries 9, haemoglobin by Tallquist scale showed very few over 95%, and 3 of 85% and less, pallor of face 19, only 1 case with albumen in the urine, headaches 21, tremor 10, myalgia and joint pains 24, loss of weight 2.

We were frequently referred by painters to furniture finishers for the effects of the volatile substances. 195 men were examined. The effects were far less than in painters. There were practically no cases of acute intoxication recorded, 70% had no complaints and showed no effects. Only 10% or 19 cases had enough associated symptoms and signs to be considered affected to any extent by the volatile bodies used, and of these 6 were mild cases. Some examples:

1. Age 28. Eight years at the finishing trade. Now applying stain by brush. Poor appetite, diminishing morning appetite. Indigestion. Constipation. Decreasing weight. Needs glasses since commencing finishing work. BP 142-85. Benzole has caused him to be dazed and to have momentary losses of memory.

2. Age 32. Ten years at the trade. Now applying varnish with brush. Occasional dizziness, nervousness, pains in legs, fre-

quent headaches often severe, occasional blurring of eyes, eyes tire easily when reading, varying degree of night polyuria.

3. Age 31. One year of the trade. Staining and filling by brush work now. Poor appetite, especially in the morning. Indigestion. Constipation. Unsound sleep. Bad taste in morning. Losing weight. Cracked skin on hands. Slight pyrrohoea. Night and day polyuria. Fumes make him drowsy, nauseated, half drunk at times, dopey the following moning, and bad taste in mouth.

4. Age 35. Ten years at the trade. Has spent five years on spray machine, using benzine, turpentine and denatured alcohol. Does some outside painting after hours. Poor appetite especially in morning, indigestion, constipation, occasional headache, morning expectoration of phlegm, occasional dizziness, puffiness of lower lids at times, pale but normal Hgl, has inflamed sore throat.

5. Age 30. Ten years at the trade, using shellac mainly—spray machine for six years. Had pleurisy five years ago. Nervous, constipated, some indigestion, inflamed conjunctivae, radial and temporal arteries hardened. BP 130-85.

Forty men who used the spraying machine were included in the 195; their complaints and physical defects were found to be milder than for finishers in general. The suction cabinets used are effective in withdrawing fumes if properly installed, and the old dipping vats are disappearing. Lead is seldom used in the finishng trade.

The physical effects noted in the 195 finishers are as follows:—Constipation 12, indigestion 12, pyrroheoa 11, bad teeth 10, inflamed throat 10, bronchitis 3, increased blood pressure 5, hardened arteries 8, only 2 cases with Hgl less than 90% by Tallquist scale, pallor of face 15, day polyuria 2, night polyuria 4, headaches 14, dizziness 10, myalgia and joint pains 8, loss of weight 6.

Industrial poisoning by turpentine has caused staggering, unconsciousness, conjunctivitis, skin irritation, nausea, vomiting, head ache, dizziness (frequently only on reaching fresh air) irritation of throat and of bronchial tubes and renal system, dry throat, cough, strangury and haematuria.

Benzine industrially may give acute symptoms and possibly chronic ones. The acute form usually has headache, nausea, stupid feeling, heaviness or sleepiness, roaring in the ears, inclination to cough, irritation and constriction of the throat, trembling of the hands and arms, excitement or irritability. An acute attack is succeeded by a stage of depression and dullness with clouded memory and on the following day headache, loathing for food and a feel-

ing of exhaustion. Workers in an atmosphere containing benzine complain of such symptoms as not feeling quite well, loss of strength, loss of colour and weight, headaches, stupid and listless feeling, distaste for food, poor sleep, constipation and pain in the stomach. Many workmen consider that benzine, especially the poorer grades, causes more trouble and more lasting effects than other volatile substances. Many workmen have no effects whatever from the fumes. Two rubber workers in a Toronto factory are working in a warm room with benzine cement; the room is provided with downward suction, but the fumes are strong. One man has worked daily for 7-8 years, and has noticed no effects; physically he is normal. The other man has worked 7 to 8 months and has had occasional attacks in which objects become blurred and the room sways, but he has no chronic effects. In garages, men have been overcome from benzine fumes of incompletely burnt gasoline. The running of motor engines in small unventilated rooms is a source of carbon monoxide poisoning also.

The use of benzole has been increasing lately. A common use is as a paint remover; it is frequently combined with acetone. Besides the caustic action on the skin, it is very poisonous when inhaled, especally in poorly ventilated rooms. However, I have seen men using it in rubber works and in painting small metal tanks without complaints or effects. There was one fatal case in Toronto last year during the painting of a tank. Another workman in the same tank collapsed and was removed in an unconscious condition, but was fully recovered in a week or two and showed no effects from the exposure. Recently cases were reported of chronic benzole poisoning from the use of a cement for cans. An interesting series were reported by Newton[8] in 1920, where an attack of headache, anorexia, lassitude, loss of weight and sudden pain in the abdomen with nausea and vomiting occurred in a chemist working for two weeks in an atmosphere of benzole. His red blood cell count was normal; white blood cells 1,200; Haemoglobin 85%. Two men without symptoms, who had been similarly exposed, had blood pictures of (1) red blood cells 4,000,000, white blood cells 1,250, Haemoglobin 95%. (2) Red blood cells 3,700,000, white blood cells 1,700, Haemoglobin 90%. The examination of the white blood cells would appear to be a good early diagnostic and prophylactic measure in benzole workers, without waiting for subjective symptoms or haemorrhages, inflammation of gums and lips, purpura or buccopharyngeal ulcerations.

(*To be continued*)

Child Health Programme in British Columbia

By Mrs. V. S. MacLachlan, *Secretary of the Women's Institute Branch, Department of Agriculture, B.C.*

FOR some time the need has been felt for a definite and uniform working policy for the voluntary organizations actively interested in Child Welfare. In so many instances the efforts of unselfish workers have been hampered by a lack of information on the exact condition of health in their own district and still further a lack of definite instruction on the method to pursue in order to improve the known conditions. They have passed vague resolutions to the effect that "The Government provide medical and dental treatment where needed."

They have been told over and over again from the platform that one-third of the men presenting themselves for service overseas were physically unfit, that eighty per cent. of this number owed their condition to defects which could have been remedied in childhood. They have been told that a striking relation exists between the proportion of defects shown by the army draft and the proportion of defects found in our school children. What we are trying to bring home to our earnest and conscientious workers is a personal application of these figures to their own local school district, and to assist them in providing medical and dental attention for these defective children.

The figures of the army draft were published broadcast, and quoted on the platform, but the figures of the medical inspection of our schools are only published in the annual report and very seldom used on the platform.

The object of our Child Health Programme is to direct attention to these figures and suggest a means of, and assist in providing a remedy. With this object in view and following the formation of the Dominion Child Welfare Council at Ottawa on October 19, 1920, the Provincial Department of Health decided to assist in the formation of corresponding councils throughout the Province of British Columbia.

Recognizing that the success of the Provincial Child Welfare movement in rural British Columbia would depend almost entirely upon the influence of the Women's Institutes, and in appreciation of the assistance already rendered by individual Institutes, the

Board of Health issued invitations on February 21, 1921, to the members of the Public Health and Child Welfare Committees appointed at the recent Conference to consult with the Provincial Board as to what particular phase of this work could be recommended to the Institutes and also just how a definite Provincial Policy could be carried out.

The idea receiving the unanimous approval of the Conference was to strengthen and co-ordinate the efforts of existing organizations rather than organize any additional bodies. Following this idea, where there is only one organization in the district, it would be recommended that the Health Work should be carried on as Committee Work; where there are several organizations, each should take some division, appoint a representative to a central body—the Hygiene Council—and at the regular meetings of the Council report progress and difficulty, thus preventing duplication and overlapping. The Hygiene Council really being the clearing station for the various organizations.

It was further decided by the Conference to make three divisions in the work:

(1) Prenatal Work.
(2) Pre-school Work.
(3) School Work.

Prenatal.

The Institution or Councils should be asked to be distributing centres for Advisory Letters for Expectant Mothers, Diet Folders and Canadian Mother's Book. The Mother's Book and Advisory Letters, ten in number, are sent periodically during pregnancy and contain very valuable advice. The Diet Folders, five in number, outline the diet of the breast-fed and bottle-fed babies up to and including the diet of the school child. All this material to be supplied by the Board of Health.

Unfortunately it has since been found difficult to secure the names of the mothers early enough to have them derive the greatest benefit from the advice contained in the letters. Consequently the idea to have the application blanks printed in coupon form in the local papers has been suggested as one means of overcoming this difficulty.

Pre-School.

With the exception of supplying mothers with the Diet Folders for these children there seemed little that the Conference could

recommend for the voluntary organizations to do. The pre-school child has been, and is the most difficult to reach, a very great deal of education is still needed to bring home the necessity of physical examination of these children and particularly the need of attention to the teeth. Where a nursing service is established, the organizations were urged to co-operate with the nurse in holding Well Baby Clinics including the pre-school child.

School Children.

In outlining the work in connection with the school children it was felt that it was in this division that the most immediate results could be obtained. The medical examination, figures of which are found in the annual report of the Board of Health, gives the organization a definite and fairly reliable starting point. This annual report is supplied to each society and to any individual upon request. In this report are recorded the number of children attending each school in the province, the number examined and the number suffering from mal-nutrition, defective vision, defective hearing, defective nasal breathing, adenoids, enlarged tonsils, defective teeth, enlarged glands and goitres.

The need for medical and dental attention for these defects is very apparent. Health Work such as carrying on the Health Crusade, Junior Health Officer's Report and Little Mother Leagues, can all be done by the parents and teachers co-operating and this will guarantee that the children shall leave school with health habits established, this lays a splendid foundation for the future but it does not remove the defects reported. The problem confronting the members of the Conference was what the organizations could do to remedy these defects. The only practical solution was to provide a school nursing service or a Public Health Nursing Service which includes school nursing as the branch receiving first attention. It was realized by the members of the Conference that it must be the nurse in her professional capacity who could secure treatment for these defects. She, it is, who follows up the doctor's report, explains to the parents and co-operating with them and with the organizations, arrange for operative clinics. The Health Work can make just so much progress, and then the services of the Public Health Nurse becomes imperative.

For the purpose of meeting this need, the Public Schools Act was amended at the session of the Legislature in 1920 to allow the

following assistance being granted to School Districts which desire to employ nurses.

Cities of the first class receive $460 grant per nurse.
Cities of the second class receive 520 grant per nurse.
Cities of the third class receive 565 grant per nurse.
Municipal and rural school districts receive $580 grant per nurse.

AN EXAMPLE OF MONTHLY SALARY.

If the School Boards of a municipality or rural school district decide the nurse's salary at $125.00 per month for the twelve months of the year, the Government will grant $48.33. This leaves a balance of $76.67 per month for the School Boards to make up. Whilst no one rural school district could attempt to raise that amount, in a group of from five to seven boards each could at the annual school meeting vote its proportional share of this sum, which would be $10.00 (slightly more or less) per month per School Board. This would not work a hardship on any individual board, and yet it provides the salary required.

There still remains the question of transportation for the nurse, because in the rural districts most of the time would be spent walking from one case to another. Here is where the organizations such as the Institutes could render signal service by raising funds to guarantee this necessary means of conveyance. Organizations are urged to promote and organize public opinion in order that the School Boards may feel they are carrying out the wishes of the people in voting this salary.

After the residents of any district have experienced the advantages of this nursing service for one school term, nothing would induce them to do without it. To assist the organizations in promoting and developing public opinion, the Provincial Board of Health has generously offered to provide half the salary for a period not exceeding six months, at the end of which time it was expected that the School Boards would provide the salary on the terms specified in the amendment.

An account of this Conference with recommendations and material mentioned was submitted to all the Institutes. The result has been very encouraging. An increased interest in, and a growing realization of the responsibility to "the child in their midst" is rapidly being developed. Following this Conference as a logical outgrowth, has been the organizing of District Child Hygiene

Councils in the four Women's Institute Districts, namely, Vancouver Island, Lower Mainland, Okanagan and Kootenay, each with its district executives.

At Vancouver Island District Conference in December, 1921, the question was asked, "After the nurse is established, what is there for our organization to do? Are we not interfering with work to attempt anything further?" It was pointed out that the Public Health Nurse could do little or nothing beyond bedside care without an enlightened community to support and carry out her instructions. Every epidemic that sweeps through our schools is a direct result of ignorance of the necessity of observing quarantine laws. It is recognized to-day that it is within the power of civilized man to give contagious diseases coup de grâce for ever. But this will only be done by education and it is only the voluntary organizations that can at present do this education. Sanitary legislation is useless without sanitary education. The discussion culminated in a formal request in the form of a resolution asking for a set of programmes suitable for twelve monthly meetings to be supplied by the Provincial Board of Health to any organizations interested.

Accordingly the following set of twelve programmes was drawn up and recommended for consideration. Material, including Roll Call for three of these have been supplied.

CHILD HYGIENE COUNCIL.

Programme 1.

Roll Call. Figures from Vital Statistics.
Address. Public Health in B. C.
Report of Provincial Board of Health.
Appointment of Committee to report on number of babies in community.
Number of Canadian Mother's Books distributed and Diet Folders 1 and 2.
Maternal death rate and infant death rate found on pages References.

CHILD HYGIENE COUNCIL.

Programme 2.

Prenatal and Maternity Care.

Roll Call. Quotations on "Mothers."
Report of Committee appointed.

Address. "Care of Expectant Mother."
Discussion.
Appointment of Committee to report on number of children of pre-school age in community. Communicable diseases occuring in district during year among children.

CHILD HYGIENE COUNCIL.

Programme 3.

Pre-School Child.

Roll Call.
Report of Committee.
Talk on Health of Pre-school Child including diet.
Discussion.
Appointment of Committee to report on defects among school children in district found in report of Board of Health.
References.

CHILD HYGIENE COUNCIL.

Programme 4.

Defects of School Children.

Roll Call.
Report of Committee.
Reading of report on medical examination of school children, Other reading.
Series of papers—10 minutes on each defect.
Discussion. What action should be taken by members of the organization to institute remedial measures.
Appointment of Committee to report on number of communicable diseases in district during last five years. Number of deaths. Distribution of posters of various diseases.

CHILD HYGIENE COUNCIL.

Programme 5.

Quarantinable Diseases.

Roll Call.
Report of Committee.
Discussion. Length of quarantine for .....
Law regarding this (10 minute papers)
Talk on results.

Appointment of Committee to ascertain number of school children with malnutrition.
Number drinking milk.

CHILD HYGIENE COUNCIL.

Programme 6.

Malnutrition.

Roll Call.
Meaning of term malnutrition.
Prevalence and effect on growing child.
(Series of 10 minute papers.)
Appointment of Committee to discover number of children in district suffering from defective teeth.

CHILD HYGIENE COUNCIL.

Programme 7.

Roll Call.
Report of Committee.
Address. "Dental Caries."
Discussion on possibility of dental clinic for district.
Appointment of Committee to report on T. B. in Province. Number of deaths, sanatoria and needs.

CHILD HYGIENE COUNCIL.

Programme 8.

Roll Call.
Report of Committee.
Address on Tuberculosis.

Posters.

CHILD HYGIENE COUNCIL.

Programme 9.

Roll Call.
Cancer.

Posters.

CHILD HYGIENE COUNCIL.

Programme 10.

Roll Call.
Address. Pneumonia.

CHILD HYGIENE COUNCIL.

Programme 11.

Roll Call.

Address. Public Health Nursing Service.
Qualifications of Nurse. Duties.
Mode of support.

CHILD HYGIENE COUNCIL.

Programme 12.

Economy of Health Tax.

Mental Hygiene in Toronto Public Schools

By Eric Kent Clarke, M.B.

Read before joint meeting of Sections of Medicine and Preventive Medicine and Hygiene, Academy of Medicine.

(Combined meeting Preventive and General Medicine Section, Academy of Medicine, January 30, 1923).

IT is an opportune time to present this paper at the combined meeting of these two sections of the Academy. Although the survey has been going on for some period, it has been felt that until the work was well founded it was wise to proceed cautiously, gathering facts to prove its necessity. The time has arrived when our statements can be backed up with figures, and help is required from every available source to bring about the needed and long overdue reforms.

To state that in the Toronto Public Schools a little over two per cent. of the children are subnormal would merely be going over old ground, and would mean little. This number does not sound startling or even overwhelming. It means, however, that there are in the Public schools alone, not including the Separate schools, between 2,200 and 2,300 pupils who are incapable of receiving an education in the ordinary way. This throws a different light on the work. Twenty-two hundred appears a much more formidable figure than two and a half per cent.

These are children who will never have a mental age of over ten and one-half years, and who in the ordinary course of events never get beyond the second book. It cannot be hoped to educate them along customary lines, as purely academic work is out of their reach. The majority are educable to a certain degree, and many can be made self-supporting.

In the past, the thought that once a child was labelled a mental defective meant institutional care, without future for the individual. This is a wrong attitude and has done harm, impeding the progress of the work more than anything else. Perhaps the fault lies in that too often the term mental defective has been interpreted to cover only idiots and imbeciles. The high grade type, who in many ways show an equal inadequacy for social adjustment to the lower forms, do not fit in with the mental picture held by lay

observers. As they possess a certain amount of superficial glibness, can read and write, do simple arithmetic, etc., they slip by unnoticed.

The fact that they may pass in a crowd and escape detection does not help the individual to make his adjustments in every day life. To prevent this failure is our mission. The accusation has been made too frequently that all mental defectives should be locked up during their whole lifetime. This idea is wrong. The more that can be successfully kept in the community the better, and with proper supervision and education many can be made successful wage-earning citizens who are an asset to the State rather than a liability.

So many problems of preventive medicine have roots in mental abnormality that much can be done to improve the general public health by the proper and adequate solution of the mental defective problem.

While the percentage of subnormality in the city schools is 2½%, different sections of the city show great variation. For instance, many areas show an individual ratio of less than 1% mental defect per total school population. Fortunately for the community this low percentage predominates. On the other hand, other sections show as high as seven, eight, ten and even elevent per cent. of the children attending school are mental defectives. It is in these districts our troubles lie. The history of each is almost identical. tions show as high as seven, eight, ten and even eleven per cent. respectively, are examples. Each had its origin as a shack town, standing just outside the city limits. Land was cheap and building restrictions non-existent. A shack could be built of boards covered with tar paper for very little. Each of these three cases were founded at approximately the same time, when our barriers at ports of entry did not exist for English-speaking settlers. The ocean steamship companies waged a rate war, and a steerage passage could be obtained for about twenty-five dollars. Everything was done to stimulate the flow of immigration to Canada.

Along with the others came great numbers of misfits from the British Isles, filled with hope that the new land might hold success for them. The low passage rates made it possible for them to come, and all were welcomed without question. But the change of climate had not the desired effect, and the shortcomings that proved to be the source of failure in the Old World again came to the fore in many cases. While some of the residents of the shack town moved to a more desirable neighbourhood, the weaklings had to stay for

the simple reason that finances would not permit anything better. As time passed, these colonies, which originally were outside the city, have been enveloped by the growth of the city leaving them as blots on the landscape. Being essentially of a cheap nature the vacancies left by the migration of the prosperous have been filled by others who had to seek surroundings to fit a slim pocket book. In the course of time most of the best elements were gradually eliminated, leaving the dregs.

The occupations of the fathers of pupils attending these schools is interesting. The majority are unskilled labourers, teamsters, elevator men, etc., showing that they did not possess sufficient intelligence to advance further. It is a fact that in no section of the city did we find so many families who had been deserted by the fathers. At first it appeared this might be due to economic conditions, that once the bread winner absconded the family must seek the cheapest place to exist. But usually this was not the case. The majority of families who had been deserted in this district were old residents, and the deserter, it appeared, became down-hearted at the hopeless prospects he faced with an ever-increasing family, discouraging home conditions, and a persistently small wage. Consequently he took French leave, ordinarily with some other man's wife, to repeat the experience in new fields.

During one of the periods when unemployment was causing anxiety, the city opened a relief bureau. It was found there that although all the districts of the city required a certain amount of help the three sections with the highest percentage of mental defect in school children required by far the most urgent help. Here, again, is an indisputable proof of the hereditary nature of mental defect, and of the inadequacy of the class as a whole. When there is a pinch the subnormal is the first to suffer. When an employer feels the necessity to reduce his staff it is the one who is least use that goes first. This means the unskilled man. His wages are low and are not managed to the best advantage, and they are always but a short way ahead of starvation. Once the income ceases it is only a matter of a few days till they become dependent on charitable societies. If in days gone by they had been taught some useful trade at which they might prove more or less proficient they would probably have had a better chance of earning a higher wage, and of retaining a job longer, if placed in a suitable position. A mental defective who finds his proper niche in routine work he is capable of doing is, as a rule, a faithful worker, happy and contented with his lot. He rarely changes his position unless forced to do so, and his

lack of ambition makes him content to go on doing the same thing day after day. The war taught a useful lesson on this point, and showed that a lot of mental defectives who had previously carried on fairly well in the community where they were accustomed to a routine, broke down, developing shell shock and other ailments, under the strain of constantly changing conditions of the army.

Some may say that while we have so many defectives and are always likely to have them, why worry! As a matter of fact, a certain number are essential to the community to do the rough work that the more intelligent refuse to undertake. But to overcome the conditions that exist and make the best of poor material to be dealt with, advances are being made and still greater ones remain untouched.

The inauguration of a system of auxiliary classes has in two ways done much to relieve the situation in the public schools. It has removed the slowly progressing pupils from ordinary grades where they proved a drag on those of average intelligence, and given the latter a better opportunity to advance more quickly. The teacher has more time to devote to those capable of absorbing information. One feebleminded child requires three times the amount of the teacher's day as an average pupil. Secondly, the slow pupil for the first time has a chance of getting an education suited to his needs. The classes are limited to sixteen pupils instead of fifty. Here he is no longer the tailender in an unequal fight. The work is such that he is capable of understanding. The teacher has an opportunity to bestow individual instruction on things he does not understand. The most important thing that he is taught is to use his hands, to do work that appeals to him. There is now some incentive to attend school.

It has been found that with the inauguration of auxiliary industrial classes truancy is greatly reduced. One truant defective is a source of worry—he is usually a chronic case, and this is the first link in the chain of the development of a juvenile delinquent. The manual work is emphasized, for it is the line the mental defective is best adapted for. The classes develop this ability, which would otherwise be neglected in school, for regular manual training is not begun until the pupil reaches the fourth book. The mental defective never reaches this grade. In auxiliary classes the handwork is of necessity of a limited nature on account of lack of space and equipment, so that only the more simple forms can be carried on. Up to the age of twelve the existing classes are satisfactory, but beyond this are useless. At present we have thirty-seven in operation.

This is only a beginning as an additional hundred are required. Lack of space in schools has hindered the opening of more, and it is in the schools that require the classes most, congestion is greatest, so that in some areas where there is urgent need for such assistance no classes exist. It is hoped that eventually this can be overcome.

With the beginning of last school year the Adolescent School Attendance Act came into force, and as a result we are more at sea than ever. The aim of the Act is admirable, but like so many other legislative measures some one had the germ of a great idea, had the law passed and enacted, but neglected to work out the details as to how it should work. The law requires every child to attend school till sixteen years of age, assumes that all children are of equal intelligence, and aims to give all at least a high school standing. The thought is good, but shows a lack of insight on the part of the originators, and under the present circumstances has earned the severe criticism it has received. It was a mistake to have the Act enforced prematurely, for there was no machinery to carry out its requirements. Pupils who had reached their academic limit and required training along technical lines found that it could not be managed for them, and it meant two extra years grubbing along on work that was of no interest to them and would be of no practical value in later life. In other words, it is not elastic enough to meet the needs of the whole school population.

Amongst the subnormals it played havoc. The auxiliary classes are forced to keep the pupils till sixteen, and it is impossible to interest these bigger children in basketry, weaving and other forms of simple handwork that can be carried on with the small equipment allowed. The only alternative is to return them to ordinary grades, where they lose all the good gained so slowly with the special teaching. Either plan makes the pupil feel ashamed to be at school.

To meet this there is an active movement afoot at present to establish a Trade School for the older subnormals. One central school for boys, another for girls, where eight or ten industries suited to this type of individual can be taught. With such a training supplementing the ground work of the junior auxiliary class, there is a better chance for the pupil on leaving school to become self-supporting, especially if the school maintained a placement bureau and placed those about to leave in suitable positions.

The foundation of such a school is essential, and the necessity is recognized by the school authorities. There are so many things re-

quired by the schools of Toronto where the school population grows more rapidly than schools can be erected to accommodate them, that the danger lies on the possible shelving of the Trade School temporarily. To the Mental Hygiene work this would be almost a fatal blow and undo all the work that has taken years to accomplish. Help is needed from every source to urge the Trade School. Such schools are in operation in many other cities, so the argument is not based on theory alone, but on the practical results observed elsewhere.

An extensive system of follow-up work is required as it is of little use to educate the subnormal up to a certain point, and then turn him loose on his own resources to sink or swim as best he may. The success depends on his being in the proper environment, and untl he learns to make his own adjustments to have some one to depend and look to for assistance.

An argument brought forward by the critics, and we always have plenty of them, is that the employer will object to the social worker coming into his factory interrupting the work during hours. This difficulty, I think, can be easily overcome. A recent survey of the subnormal in industry showed that the majority of employers of large staffs are aware of the large number of misfits on the organization, who are poor producers, wasteful, unhappy and generally unsatisfactory, but are essential for various types of unskilled work. The employer is willing to stand for this cheap type of labour, as they can see no way of doing without it, although aware of its inefficiency. The attitude is one of tolerance, and in many quarters there was hope that something would be done to improve things. The employers are willing to co-operate if they can be shown some constructive plan that will increase production. A great deal depends on the personality of the social service worker. She must not be of the "sob sister" variety, who intrudes in an offensive manner into other people's affairs, but a capable, broad minded person, with vision and adaptability, who can follow up each case, find what the surroundings are and how the individual is getting along. The employer, or some responsible representative should be interviewed, and the case and circumstances explained if necessary. It is argued that it is unfair to prejudice the employer against the employee, but the inadequacies are likely to be discovered sooner or later by the employer, and it is better to forewarn him and place him in a position where the handicapped subnormal has the best chance of success. The employer who does not want to

co-operate, the probability is that his factory is not the type likely to offer the best atmosphere for the subnormal adolescent.

For the mental defective, who has strong anti-social tendencies the Trade School is of little value, for they are not successful in the community. The character is weak and the ability of conforming with the laws lacking. For the protection of the individual and the protection of others, permanent segregation is necessary. No suitable institution of this type exists in Ontario at present. The Orillia institution is not large enough, and makes little attempt to educate the patients. A farm colony is required, organized along the same lines as the trade school where industries can be taught in addition to the outdoor work. Here under constant supervision the anti-social tendencies in some cases can be replaced by habits of industry and the necessity of abiding by the law. Some of the colony cases can be paroled out under supervision, others will require permanent care. Industry for everyone should be the slogan of such a Home.

The problem is essentially a medical one, and much can be done to prevent the conditions that exist at present amongst the feeble-minded. This class will always exist in the community—a certain number are essential, but must be controlled, otherwise they will increase to such an extent that there is danger of lowering the whole standard of the race. Our immigration must be closely watched, and in the future Canada must not be made the dumping ground for undesirable types from other countries. Mental Hygiene has a great role to play in the future, and can do much to overcome the conditions that exist at present.

News Notes From Saskatchewan

The Division of Sanitation of the Saskatchewan Bureau of Public Health prides itself on being a progressive division of a progressive provincial health authority.

During last year the entire Province was covered by the inspectors of the Division who were each allotted a district and as a result of this systematic sanitary survey of the Province information is being prepared in bulletin form on water and milk supplies, slaughter houses and other subjects of interest to the rural population. It is hoped that the number of deaths from communicable disease will be reduced still further by education in measures for an improved sanitary environment.

The Commissioner of Public Health has recently arranged that the bacteriological examinations of all water and milk samples be handed over to the Division of Sanitation. The old practice of examining each and every sample of water received has as a result been discontinued and in future anyone desiring an opinion on the safety of a water supply will be required to give the fullest information on the source of supply with a sketch of the immediate surroundings. Samples will only be examined which are taken in accordance with directions given and mailed by special delivery in sterilized glass stoppered bottles supplied by the Division.

The supervision of the harvesting and storing of ice is an activity which calls for much attention at this time of year.

All surface waters in Saskatchewan must be regarded as dangerous in their natural unfrozen and untreated state.

The majority of these waters are however, safe for use as ice cutting fields, due to the purification process affected by freezing, provided that certain precautions are taken in harvesting the ice. All persons cutting ice must have a permit and this is only given after full investigation has been made into the source and conditions of cutting.

Following a thorough investigation of all city pasteurizing plants, the term "pasteurization" as applied to milk supplies in Saskatchewan has come to mean a scientific process whereby the

public can be assured that their milk is as safe as it is humanly possible to make it.

In 1920 pasteurization at one city plant removed only 4 per cent. of the bacteria in the raw milk and "clean" empty bottles contained 411,000 bacteria per c.c.

To-day all pasteurizing plants in Saskatchewan are removing over 98 per cent. of the bacteria and clean empty milk bottles are sterile.

General News Notes

At a meeting of the Executive of the Canadian National Association of Trained Nurses, held in Toronto, January 19th, 1923, Miss Jean S. Wilson was appointed Executive Secretary for the Association.

On February 1st, Miss Wilson with the assistance of the President, opened up the National Office at 609 Boyd Building, Winnipeg.

Besides acting as Secretary-Treasurer for the Association, Miss Wilson will conduct a bureau of information regarding all matters relating to the nursing profession in Canada.

Miss Wilson is a graduate of the Lady Stanley Institute in Ottawa. For several years she was Superintendent of the General Hospital, Moose Jaw. Last year she was awarded the Canadian National Association of Trained Nurses Scholarship for the course in administration in the School of Nursing, McGill University. Before leaving Saskatchewan, Miss Wilson was Secretary and Registrar of the Saskatchewan Registered Nurses' Association, and for the past two years has been Treasurer of the Canadian National Association of Trained Nurses.

Monday, Tuesday and Wednesday, May 21st, 22nd and 23rd are the dates set for this year's annual meeting of the Ontario Health Officers' Association.

The session will be held in the Physics Building, University of Toronto, and an excellent programme is being prepared. One of the speakers from out of town will be Dr. H. F. Vaughan, D.P.H., Medical Officer of Health, Detroit, Mich., and it is hoped that Dr. Banting of Toronto University will be present to give an address on "Insulin in the treatment of Diabetes."

An important feature of the convention will be a symposium on Cancer, with several able men taking part in the discussion. Moving pictures on Health subjects will be shown daily. There are many important and interesting papers to be read, fuller details of which will be announced in the April number of the PUBLIC HEALTH JOURNAL.

Dr. D. V. Currey, M.O.H., St. Catharines, Ontario, is President of the Association; Dr. T. A. Lomer, M.O.H., Ottawa, 1st Vice-President; Dr. T. J. Park, M.O.H., Amherstburg, 2nd Vice-President, and Dr. J. J. Middleton, of Spadina House, Toronto, Secretary.

ONTARIO

The Provincial Board of Health of Ontario

COMMUNICABLE DISEASES REPORTED FOR THE PROVINCE FOR THE MONTH OF FEBRUARY, 1923.

COMPARATIVE TABLE.

	Feb. 1923		Feb. 1922	
	Cases.	Deaths.	Cases.	Deaths.
Smallpox	23	0	185	0
Scarlet Fever	309	13	610	17
Diphtheria	156	21	403	38
Measles	703	7	541	1
Whooping Cough	402	30	158	5
Typhoid	65	4	31	5
Tuberculosis	173	137	171	117
Infantile Paralysis	2	2	.....	.....
Cerebro-Spinal Meningitis	11	9	6	6
Influenza	.....	335	.....	.....
Influenzal Pneumonia	.....	83	.....	41
Pneumonia	.....	756	.....	289
Syphilis	100	.....	181	.....
Gonorrhoea	84	.....	138	.....
Chancroid	1	.....	3	.....

Current Literature Dealing With Venereal Diseases

These abstracts are available through the courtesy of the American Social Hygiene Association.

THE WASSERMANN TEST. WASSERMANN TESTS IN A BOSTON MATERNITY HOSPITAL. By David L. Belding, M.D., and Charlotte B. Adams. *The Boston Medical and Surgical Journal*, December 7th, 1922.

Wassermann surveys upon hospital or dispensary patients who suffer from various pathological conditions, including syphilis, do not represent the normal incidence of syphilis or the true percentage of positives among the so-called healthy population. It is a matter of common knowledge that the Wassermann test, based on a non-specific fixation, does not detect all cases of syphilis. Negative tests are frequently obtained in syphilitics, particularly in old or treated cases, and infrequently positive reactions are obtained in other diseases. The Wassermann test, the most reliable method at our command for determining the existence of syphilis, does not represent the actual extent of the disease in a community. In the author's experience the close results with the same antigen, cholesterolized beef heart, suggests that the actual technique of performing the test is perhaps less important than the type of antigen and the method of reporting.

In 5,198 routine cases in a Boston Maternity Hospital, the Wassermann test showed some degree of positivity in 9.2 per cent., was definitely positive in 7.8 and strongly positive in 4.6.

Only 9.8 per cent. of the positive cases gave definite clinical evidence of syphilis, although an additional 19.9 showed suspicious findings.

Positive Wassermann tests, with cholesterolized antigens, in pregnant women are not comparable to similar tests in non-pregnant, and therefore do not either represent the actual incidence of syphilis in a community or the per cent of positive tests in healthy non-pregnant women.

Statistical studies from various cities cannot be accurately compared owing to differences in technique and material. For reference

all Wassermann surveys should be accompanied by a statement of the method of performing the test and a description of the status of the patient.

Owing to longer exposure, the per cent. of positives increases with age and length of married life.

The high incidence of syphilis in the negro, twice that in the white race, necessitates the exclusion of this race in certain statistical comparisons. The prevalence of syphilis varies with different nationalities.

The per cent. of positives increases inversely as the wealth of the patient, and also differs according to occupation.

In Boston the urban rate is higher than the suburban and the highest class residential districts show the lowest per cent. of positives, which, in this instance, explains the lower suburban rate.

AN ANALYSIS OF 10,628 NEW JERSEY REPORTS OF GONORRHOEA AND SYPHILIS. By A. J. Casselman, M.D. *U.S. Public Health Reports*, Vol. 37, No. 43, October 27, 1922.

More than one per cent. of all the unmarried men between the ages of 20 and 25 are reported each year as infected with gonorrhoea or syphilis. Venereal diseases are reported more frequently among unmarried than among married men; but in women the proportion is reversed, married women are reported as infected more frequently than single women. The ratio of venereal infections between the single and married males as about two to one, and this ratio is reversed among the females. This analysis indicates that there is needed some procedure which will tend to prevent the marriage of persons suffering from a venereal disease in an infectious stage.

It may also be concluded, according to the author, that if venereal disease control is to be made effective, physicians must be induced to discover, whenever possible, and include in the data reported to the state department of health, the specific source of the particular infection. Without disclosing the name of the patient who is reported, the state department can turn over to the local board of health having jurisdiction the name of the person given as the source of infection. This person may then be induced by the local health officer to seek physical examination and treatment. This should prove an effective means of bringing under treatment especially those women who do not now seek treatment for gonorrheal infections.

OBSERVATIONS ON THE KAHN PRECIPITATION REACTION. By Janet A. Holmes, *Proceedings of the Washington University Medical Society*, October 9, 1922.

The precipitation test for syphilis proposed by Dr. Kahn, of the Michigan Department of Health, is a simple reaction obtained by a mixture in given proportions of patient's serum and an antigen. Should this test prove equal in sensitiveness to the Wassermann, its superiority to the latter reaction becomes obvious. The following is a report on 131 cases seen in the Washington University School of Medicine, according to the technique outlined by Kahn.

Two rows of tubes were set up in a rack, the first row containing .3 c.c of inactivated patient's serum and .05 c.c cholesterin antigen. The second row containing .3 c.c. patient's serum and .05 alcoholic antigen. Controls were used. The rack was shaken for three minutes and incubated overnight at 37 degrees. In the morning positive sera showed marked clumping; negative sera remained clear. The scale of reading can be made parallel to the familiar four, three, two and one plus of the Wassermann. The following table gives the comparative results of 131 cases with the regular Wassermann and the same 131 cases with the Kahn test:

Wassermann	positive	
Kahn	positive	30
Wassermann	negative	
Kahn	negative	94
Wassermann	negative	
Kahn	positive	7
Wassermann	positive	
Kahn	negative	0

It will be noticed there is a disparity in seven cases. In these cases the clinical evidence supports the Kahn test as against the Wassermann.

The number of tests run is too small as a basis for conclusions, but results obtained to date are sufficiently significant to warrant further investigation.

There have been various tests proposed as a modification of, or an improvement upon, the original Wassermann reaction, but very few have justified continued use. The Kahn precipitation reaction is a simple test which bids fair to supplant the Wassermann instance, and in the cases where it differs the clinical history has been in favor of the former test. If the Kahn reaction is proven

to be what its originator claims for it, it would mean that the general practitioner could do this simple test in his office with little equipment and trouble, and little necessity for technical knowledge.

TWO HUNDRED SYPHILITIC PATIENTS WHOSE CHIEF COMPLAINT WAS "STOMACH TROUBLE: AN INTERPRETATIVE ANALYSIS OF THE DIAGNOSIS OF SYPHILIS IN CONSULTANT MEDICAL PRACTICE. By John H. Stokes, M.D., and Philip W. Brown, M.D. *American Journal of the Medical Sciences*, Vol. CLXIV, No. 6, December, 1922.

The summary of the 200 syphilitic patients who complained of stomach trouble showed that 70 per cent had neurosyphilis, 20 patients (10 per cent.) had organic lesions (syphilitic or non-syphilitic) of the gastro-intestinal tract, 9 (5 per cent) had lesions of the heart, and only 4 per cent. had true syphilis of the stomach. Sixty per cent. of the men and 70 per cent. of the women could not give histories of secondaries. In only 36 per cent. of the whole series of patients was syphilis recognized before they came to the clinic. The medical diagnosis before their examination in the clinic were apparently largely based on history (90 per cent.) and blood Wassermann reaction (65 per cent.). After examination in the clinic the diagnoses were based on history (60 per cent.), spinal fluid examination (59 per cent.), and glood Wassermann reaction (44 per cent.). Only 10 per cent. of the patients had had spinal fluid examinations before coming to the clinic, yet 59 per cent. were positive. *The examination of the spinal fluid deserves greater popularity.* Only 44 per per cent. of the patients gave a positive Wassermann reaction when they entered the clinic and 56 per cent. gave negative reactions largely as a result of treatment elsewhere. Negative blood Wassermann and negative spinal fluid do not exclude neurosyphilis as a cause of gastric complaints. Eighteen per cent. of our patients with stomach trouble had had needless operations, 80 per cent. before entering the clinic. In all but two of 35 patients there were clues to the underlying syphilis which were not followed up, or a negative blood Wassermann reaction that had been accepted as final, when other evidences of syphilis could have been found. A general rasing of the "index of suspicion" for syphilis among internists and surgeons would reduce operative mistakes on patients with abdominal symptoms. A blood Wassermann is often insufficient

to clarify the situation, but should at least be routine. Positive Wassermann reactions before operation should not be ignored. In the 109 cases which remained for treatment 70 per cent. improve, 43 per cent. were relieved of their complaint. Different methods of treatment will be required for underlying syphilis of the nervous system, the stomach, or the heart. The spinal fluid examination stands out as a procedure of the highest importance, outranking the serum Wassermann reaction in diagnostic syphililogy as applied to internal medicine. A plea is made for its wider use for diagnosis and for proper facilities for its performance and control.

GENERAL REVIEW OF THE NEW ARSENIC AND BISMUTH PREPARATIONS IN SYPHILIS. By M. Pomaret, M.D., Chief of the Laboratory of the Medical Faculty of the Saint Louis Hospital, Paris. *The Urologic and Cutaneous Review*. Vol. 26, No. 12, December, 1922.

The author gives a succinct summary of the recent French work upon arsenic and bismuth, and discusses the respective value of each of the preparations and of the best method of their use in the light of experimental and clinical facts. He, as well as Harrison, is of the opinion that 606 is more efficient when introduced intramuscularly. The following are the practical conclusions enumerated by the author:

1. The intensive treatment of syphilis remains as before the medication with trivalent arsenic having as its fundamental active constituent the base of 606 or amino-arseno-phenol. For the venous route 914 or novarsenobenzol remains the preparation which is particularly indicated. For the intramuscular route, the base of 606 or the preparation 132 fills a gap in therapeutics, making it possible by a simple technique to obtain the same therapeutic results as with the intravenous method with less noxious effect as shown by the absence of shock, the nitritoid crises, and the possibility of treating intensively by this method those who are intolerant of intravenous injections.

2. As regards bismuth therapy, we think that it demands further study and research to determine its posology and the respective indications of the soluble and of the insoluble salts. Particularly is it to be recommended in cases in which the specific lesions are resistant to mercury and arsenic; perhaps they are indicated in neurosyphilis, as recent work in this direction has indicated.

. . . . Bismuth medication shows itself to be complementary, more active certainly than mercury since it can be used in much higher doses than the latter, but still remaining behind arsenicals in intensive treatment, the serological activity of the latter being much more considerable.

3. The mixed therapy, arseno-bismuth, under the proper conditions of technique which unites the rapid treponemicidal action of the one with the remarkable power which the arsenicals have to reduce the Bordet-Wassermann reaction in a short space of time, it appears to the author to be the medication of the future, particularly indicated where "strong and quick" action is desired.

Notes on Current Literature

From the Health Information Service, Canadian Red Cross Society:

Health Education.

Prevailing fallacies in health education, by Dr. J. F. Williams, Columbia University. The author calls the attention of health workers to some of the most frequent errors in health education. "The Public Health Nurse," February, 1923, page 56.

Industrial Hygiene.

The Bulletin of the Department of Health of New York City for December, 1922, contains an address by the Deputy Commissioner of Health, on facts that should be known by the public regarding industrial hygiene.

Dental Hygiene.

In 1921 the British Medical Research Council appointed a committee to investigate the causes of dental disease. This committee has recenly issued a report on the structure of teeth in relation to dental disease. Other reports on different phases of the subject will be issued from time to time.

Pre-School Children.

A report on the physical status of pre-school children has recently been issued by the United States Children's Bureau. (Bureau publication No. 111.)

Prenatal Hygiene.

A lecture in prenatal hygiene and problems of maternity and child welfare, delivered by Dr. W. M. Feldman before the Royal Institute of Public Health. "The Journal of State Medicine," January, 1923, page 3.

School Lunches.

"A Penny Lunch" is the title of a useful booklet giving directions for starting and conducting school lunches for children.

Nutrition of School Children.

The report of the U.S.P.H.S. for January 12th, 1923, contains the result of an investigation of the height and weight of school children as an index of nutrition. The results of this investigation will be of interest to those who use height and weight tables in school health work.

Food for the Family.

A revision of the booklet issued by the New York Association for Improving the Condition of the Poor.

Public Health Nursing.

Nursing organization as developed in Toronto—by Dr. C. J. Hastings. "The Nation's Health," February 15th, 1923, page 61.

American Red Cross Publications.

The American Red Cross has recently issued the following new leaflets:—

(a) Manual of Organized Volunteer Service—A.R.C. 415.
(b) Red Cross Instruction in Home Hygiene and Care of the Sick for Girl Scouts —A.R.C. 719

Editorial

EVOLUTION.

IT was Epictetus or some other ancient sage who said that no great thing is achieved suddenly. The greatest thing for humans is health—health social, moral, spiritual—and that it should come all at once is unthinkable.

Civilization is a long time agrowing and the evolution of man from the beast requires time, suffering and strife. So the evolution of sane social relationships—of a sensible society composed of fairly treated individuals will take time, envolving as it does the elimination of those elements of strife between individuals which the mere struggle for a living has necessitated, the doing away of ancient prejudices and frictions which seem to have become woven into the warp and woof of our very being.

It could probably not be otherwise. Disorganization has proceeded to organization. The necessities of the individual at first paramount meant that the axiom that self-preservation is a first law of nature must be of prime importance, cherished by primitive man even as by the snarling beast.

But the forest primeval and the savage are a transitory phase. The forest disappears. Mankind moves from the cave to the plains, lives in cities, come to depend on his fellow humans first to help build walls to keep out savage enemies and later for co-operation of variegated types ranging from delivering his morning milk supply and providing amusement, to educating his children and building Atlantic liners and aeroplanes for him.

Ever increasing dependence on his fellow man means ever increasing demands for efficiency. Hence better workmen, better houses, better roads, better food,—life not for a few but for all, so that in the long run the socialists, the fanatic of another name with a panacea and the average well-meaning citizen all are satisfied.

Evolution as applied to biology is a phenomenon which we may observe but over which on the whole we can exert little or no influence. Evolution as applied to a community however, is a different matter. Its speed depends altogether on the action of man. Rapid spread of the idea that public service is the duty of the average rather than of the unusual citizen will mean the rapid approach of the ideal community. On the other hand the unloading of the burden of public service on the shoulders of a devoted few while the remainder work only for their own ends and play the rest of the time will definitely retard progress.

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Pasteur and the Science of Bacteriology

By J. G. Fitzgerald, M.D., F.R.S.C., *Professor Hygiene and Preventive Medicine, Director, Connaught Anti-toxin Laboratories, University of Toronto.*

On account of the work of Pasteur in the field of Bacteriology requires to be prefaced by the observation that prior to his time the foundations of this science had not been laid. To very few men is given the opportunity of charting the course, however roughly, of a new branch of science in the immense ocean of the unknown. Still fewer possess the unconquerable spirit and the genius to strike out boldly and surely and to reach the haven of immense achievement and solid and enduring contribution to science and human welfare. This however was the destiny of Pasteur, and to-day one hundred years after his birth, and nearly twenty-eight years after his death he is in even the most remote corners of the world being acclaimed as one of the greatest benefactors of humanity who has ever lived.

Pasteur's preliminary scientific training was very broad and thorough. He took immense pains to acquire a substantial background of mathematics and the natural sciences, physics, chemistry and biology. There was of course very much less differentiation of, and distinction between, these three branches of natural science seventy-five years ago. It was quite possible for a scholar of that time to become an authority in all three fields, to keep abreast of new developments and at the same time to make substantial contributions to all of them.

Pasteur's earliest work was in the field of chemistry. Between 1845 and 1855 his attention was directed almost entirely to the solution of problems which were only indirectly related to biology and to bacteriology. His studies in stereochemistry, and subsequently in fermentation proved to be the bridge over which he crossed, to enter the realm of bacteriology. The authority of the

great chemists Berzelius and Liebig was such, at this time, that their theories of the nature of fermentation were everywhere accepted. Liebig's explanation of chemical decomposition or fermentation was that a ferment or influence (this being an unstable organic substance), in decomposing, set in motion, as a result of the rupture of its own elements, the loosely bound molecules of the fermentable matter. In other words, the part of the yeast which produced fermentation was an altered dead portion acting upon sugar. According to this it was not the result of vital activity, in other words it was not a physiological process. Pasteur as was his invariable custom submitted the question to experimentation. Through scientific investigation he felt convinced, this problem could be solved and in no other way. Fruitless speculation had too long delayed the elucidation of the question. Pasteur was at this time, 1856, Professor and Dean of the Faculte des Sciénces at Lille. Here many opportunities for the study and investigation of the processes of fermentation presented themselves.

He examined with his microscope the fluids in which fermentation was proceeding. He observed the shape of the living micro-organisms in these fluids. He correlated his microscopic findings with the results obtained on many occasions in the process of fermentation with different fluids containing a variety of micro-organisms. Pasteur established the fact that when certain micro-organisms were present the fermentative changes resulted in the recovery of satisfactory products; when other forms were present, the contrary was the case. Schwann and Cagniard-Latour, the latter a French physicist of distinction, had prior to this time observed that the ferment was composed of yeast cells, and that they reproduced by budding. They also speculated that these yeast cells, probably acted upon sugar through some effect of their vegetation. Pasteur continued his experiments on both lactic acid and alcoholic fermentation and soon he had convinced himself that fermentation of any sort was due to the activities of a living micro-organism. He found that different types of fermentation were due to different varieties of these micro-organisms. In this, as in other investigations, Pasteur presented the results of adequate and carefully controlled experiments, where others had been satisfied with a few observations and much speculation. The paper on lactic acid fermentation was presented before the Lille Scientific Society in August, 1857. Later during the same year a paper on alcoholic fermentation was read before the Academie des Sciénces in which he declared that his experiments showed that the splitting of

sugar into alcohol and carbonic acid was due to the activities of organized living agents, "microscopic globules." It was a physiological process.

These were the first correlated studies of morphology and biochemical activities of bacteria ever made and were completed at a time when there was no technique for the isolation of bacteria in pure culture, no methods of sterilization and no definite criteria for the differentiation of bacterial species. Parenthetically, it may be added, it was also prior to the time when any bacterial species had indubitably been shown to be the etiological agent of a disease process in man or lower animals.

At this time a firm belief in spontaneous generation (generatio aequivoca) was not the exclusive possession of children, pseudo-philosophers or the illiterate. On the contrary it was very widely held. The doctrine, *'omne vivum e vivo'* or *'omne vivum ex ovo,'* while strongly supported by the earlier work of Spallanzani had many more enemies than friends. For the next five years (1865) Pasteur devoted himself assiduously to scientific experimentation aimed at the elucidation of this problem as well as continuing his studies of fermentation and putrefaction. In 1861 in conducting experiments on butyric acid fermentation Pasteur made the very fundamental observation that certain micro-organisms developed only in the absence of free oxygen. Thus the first discovery relating to anaerobiosis as well as the varying oxygen requirements of different bacteria was made.

In the meantime a very bitter scientific controversy was being waged about the question of spontaneous generation—several scientific workers in France as well as others elsewhere were not disposed to admit that Pasteur was right when he concluded as a result of a long series of experiments, that the appearance of living micro-organisms in fluid contained in flasks, etc., was due to the contamination of the fluid by air containing organized bodies.

Infusions of organic matter were made. They were clear when first prepared. They were then exposed to heat, even to boiling. Unless carefully protected from dust particles they soon became cloudy and if examined were found to contain innumerable micro-organisms. Pasteur's own words quite explicitly and concisely indicate how he once and for all disposed of the question of spontaneous generation. He wrote:

"I place a portion of that infusion into a flask with a long neck, like this one. Suppose I boil the liquid and leave it to cool. After a few days, mouldiness or animalculæ will develop in the

liquid. By boiling, I destroyed any germs contained in the liquid or against the glass; but that infusion being again in contact with air, it becomes altered, as all infusions do. Now suppose I repeat this experiment, but before boiling the liquid, I draw (by means of an enameller's lamp) the neck of the flask into a point, leaving, however its extremity open. This being done, I boil the liquid in the flask, and leave it to cool. Now the liquid of this second flask will remain pure not only for two days, a month, a year, but three or four years—for the experiment I am telling you about is already four years old, and the liquid remains as limpid as distilled water. What difference is there, then, between those two flasks? They contain the same liquid, they both contain air, both are open! Why does one decay and the other remain pure? The only difference between them is this: in the first case, the dusts suspended in air and their germs can fall into the neck of the flask and arrive into contact with the liquid, where they find appropriate food and develop; thence microscopic beings. In the second flask, on the contrary, it is impossible, or at least extremely difficult, unless the air is violently shaken, that dusts suspended in air should enter the flask; they fall on its curved neck. When air goes in and out of the flask through diffusions or variations of temperature, the latter never being sudden, the air comes in slowly enough to drop the dusts and germs that it carries at the opening of the neck or in the first curves.

"This experiment is full of instruction; for this must be noted, that everything in air, save its dust, can easily enter the flask and come into contact with the liquid. Imagine what you choose in the air—electricity, magnetism, ozone, unknown forces even, all can reach the infusion. Only one thing cannot enter easily, and that is dust, suspended in air. And the proof of this is, that if I shake the flask violently two or three times, in a few days it contains animalculæ or mouldiness. Why? Because air has come in violently enough to carry dust with it.

"And, therefore, gentlemen, I could point to that liquid and say to you, I have taken my drop of water from the immensity of creation, and I have taken it full of the elements appropriated to the development of inferior beings. And I wait, I watch, I question it, begging it to recommence for me the beautiful spectacle of the first creation. But it is dumb, dumb since these experiments were begun several years ago; it is dumb because I have kept it from the only thing man cannot produce, from the germs which float in the air, from Life, for Life is a germ and a germ is Life. Never

will the doctrine of spontaneous generation recover from the mortal blow of this simple experiment."

Pasteur's work on fermentation was a logical preliminary to his attempt in 1864 to determine the cause of the disease of wines which entailed very considerable economic losses in certain districts in France. He concluded after careful morphological studies of the micro-organisms found in the wines that "the alterations of wines are co-existent with the presence and multiplication of microscopic vegetations." Certain concrete proposals were made by Pasteur at this time, which had they been adopted would have controlled the undesirable fermentative activities in wines. The thermal death point of these micro-organisms was ascertained very definitely. These were the first accurate experimental studies of thermal death points of bacteria. Between the years 1865 and 1870 Pasteur was engaged in a series of investigations in an effort to discover the cause of an epidemic which was ravaging the silkworms and threatening the very life of sericiculture in France. This fascinating chapter of achievement properly belongs in the category of work in Protozoology and so will not be dealt with here.

We have now reached the place in Pasteur's scientific life where he was about to scale the heights and to achieve enduring fame. The philosophic conception that certain human and animal diseases which manifested pronounced communicability and appeared in pandemic or epidemic outbursts, were really due to living agents or *contagium vivum* was expounded at regular intervals. About 1666 Robert Boyle, an English physicist, at Oxford had expressed the conviction that the solution of the problem of the nature of ferments would do much to explain certain phenomena of disease. Pasteur was very greatly impressed by this and in his mind's eye saw clearly the possible relationship of minute living agents to communicable diseases. But vague speculation was to have no place in the programme which Pasteur marked out to test the validity of this conception. Accurate and careful observation, correlated with splendidly conceived and wisely controlled experiment, was alone depended upon to reveal the truth.

The work in 1871 on cultures of yeasts of value in brewing led to the development of an exact technique for sterilization, the so-called method of pasteurization or fractional sterilization. This added much to the methodology of the embryonic science of bacteriology. In 1874 before the etiological relationship of any bacterial species to a disease process had been conclusively established

Joseph Lister, later Lord Lister, a Scottish surgeon, who had read and profited by Pasteur's work on lactic acid fermentation wrote to Pasteur as follows:

"My Dear Sir,—Allow me to beg your acceptance of the pamphlet, which I send by the same post, containing an account of some investigations into the subject which you have done so much to elucidate, the germ theory of fermentative changes. I flatter myself that you may read with some interest what I have written on the organism which you were the first to describe in your "Memoir on lactic acid fermentation."

"I do not know whether the "Records of British Surgery" ever meet your eye. If so, you will have seen from time to time notices of the antiseptic system of treatment, which I have been labouring for the last nine years to bring to perfection.

"Allow me to take this opportunity to tender you, my most cordial thanks for having, by your brilliant researches, demonstrated to me the truth of the germ theory of putrefaction, and thus furnished me with the principle upon which alone, the antiseptic system can be carried out. Should you at any time visit Edinburgh, it would, I believe, give you sincere gratification to see at our hospital how largely mankind is being benefited by your labours.

"I need hardly add that it would afford me the highest gratification to show you how greatly surgery is indebted to you.

"Forgive the freedom with which a common love of science inspires me, and

"Believe me, with profound respect,

"Yours very sincerely,

"JOSEPH LISTER."

The foundation, first, of antiseptic and later of aseptic surgery were thus laid by Pasteur. He at this time very definitely advised the sterilization of all surgical instruments before use by passing them through a living flame and he also recommended the sterilization of all surgical dressings by heating to a temperature of 150 degrees C. before being used. (He also proposed that plugs of cotton wool should be used to stopper glass vessels containing sterile fluids to prevent the entrance of organic matter containing living micro-organisms.)

In 1838 Delafond of the Alfort Veterinary College saw in the blood of cattle that had died of anthrax "little rods" to which he attached no significance. In 1850 Davaine and Royer repeated the

work of Delafond but without appreciating its significance. Davaine in 1863 read Pasteur's paper on (the cause of) butyric acid fermentation and was greatly impressed by it, and in 1863 he again examined blood from sheep that had died of anthrax and found in it tiny bodies which he called "bacteridia." He announced that he believed these were the cause of anthrax. Various workers now took up the question and very soon the whole subject was completely obscured by contradictory and conflicting results.

Pasteur undertook to investigate the question. He took a small amount of blood from an animal that had died of anthrax, and with all aseptic precautions planted it in a sterile flask containing a slightly alkaline, sterile culture medium. In this medium he grew pure (single) cultures of anthrax bacilli. He noted the characteristic growth of these micro-organisms. He sub-cultured his growth by carrying over from flasks in which the bacilli were growing, a few drops to other flasks of sterile culture medium thus seeding them, and permitting new generations of these microbes to appear.

The next step consisted in establishing that the germs which were thus grown in an artificial culture medium were really the causative agents of the disease anthrax. This was done by the injection into susceptible animals of a drop of culture material from the flasks. The animals so injected developed anthrax and from their blood anthrax bacilli were recovered. Thus the etiological relationship of a species of micro-organism to the disease anthrax was conclusively established. The way was now prepared for the complete investigation, through the application of similar methods, of all the communicable diseases. Pasteur announced it as his belief that "Each infectious disease is produced by the development within the organism of a special microbe." Between 1877, when Pasteur completed his work on anthrax, and 1895, the year of his death, the causative agents of nearly all the important communicable diseases were discovered.

To this very remarkable accomplishment Pasteur contributed the lion's share in elaborating technical procedures, formulating criteria by which results could be appraised and by a rigid insistence on the necessity for most exact experimental verification of all opinions expressed or views advanced. Such remarkable achievements would in the vast majority of cases have marked the climax of scientific contribution. Such, however, was not the case with Pasteur, his great vision led him to develop specific

methods of inestimable benefit to the human race for the prevention of many communicable diseases.

In all of this he was guided by ideals which were embodied in the declaration "Blessed is he who carries within himself a God, an ideal, and who obeys it; ideal of art, ideal of science, ideal of the gospel virtues, therein lie the springs of great thoughts and great actions; they all reflect light from the Infinite." In no small measure the improvements noted in the state of public health in the last two decades are the fruits of Pasteur's labors. Thus through the application of the methods of preventive medicine in the past fifty years the span of life on the average has increased 15 years. Forty-one years being the average length of life in 1870, whereas it was 56 in 1920. In the past twenty years also the infant mortality rate has been reduced one-third, the tuberculosis death-rate cut in half and the deaths from typhoid fever reduced to one-fifth of their former number. These are some of the reasons why a grateful posterity should pause to pay homage to the memory of Louis Pasteur.

Hydrophobia: Four Centuries Ago

By The Honourable William Renwick Riddell, LL.D., F.R.S.C., Etc., *President, Canadian Social Hygiene Council.*

THE researches of Pasteur in respect of Hydrophobia are epoch-making: he cannot, indeed, be said to have found the immediate cause of Rabies, and the world has still to be content with knowing the condition, but he has found a perfect prophylactic.

Before his discoveries, science was not much further advanced in respect of Canine Madness than in the times of the Greek and Roman writers, Hippocrates, Galen, Celsus.

It may be of interest to give the views of that fine flower of the Renaissance, Girolamo Fracastoro of Verona, who wrote in the first half of the 16th century, and was at the very top of his profession.

He gives a description of the disease in man and its treatment, in his celebrated Latin prose work published at Verona, 1546, "De Contagionibus, et Contagiosis Morbis et eorum Curatione," to which his work in 24 chapters, "De Sympathiâ et Antipathiâ Rerum" was avowedly written as an Introduction[1]. He speaks of rabies in the dog in his Latin dactylic hexameter poem, "Alcon, Sive de Cura Canum Venaticorum"—the precise date of the publication of this poem is uncertain.

In the First Book of the prose work of 13 chapters is a definition followed by a classification of Contagions: in the Second of 15 chapters, Chapter X is "De rabie"; and in the Third of 11 chapters, Chapter IX is "De curatio Rabidorum"—the First Book may be neglected for the purpose of this article.

Description.

At the very beginning of Lib II. cap X, Fracastoro agrees with Galen[2] that it does not occur *per se* except in dogs and with Aristotle that all animals bitten by rabid dogs necessarily become rabid except man alone. This, he explains (adding that animals so bitten die) by the "feritas," wildness, by and through which they resemble the dog, while "the nature of man is far different from this wildness and resemblance, for which reason man has no immediate

'analogia' for taking the contagion—whence it happens that not all who are bitten even become rabid, but many through the advantage of their natural (*ex se*) temperament either do not contract the disease, or if they do, they survive."

By an ingenious argument, Fracastoro concludes that the "analogia" in man for the contagion of rabies is not the solid parts but the melancholic humor. "Analogia" means analogy or likeness; and in his work "De Sympathiâ, etc.", the author explains that like attracts like; he means, here, that the contagion of Rabies is attracted to and finds its proper field of action in the melancholia; he adds that the dog "valde melancholicum animal est"—is a very melancholic animal. He is here, of course, implying the current theory of the four humours of the body on the proper admixture, crasis, temperamentum[3] of which so much of bodily health was supposed to depend—Sanguis (Blood). Pituita or Phlegma (Phlegm, Rheum), Chole or Cholera (Yellow Bile) and Melancholia (Black Bile).

Rabies is not contracted from every kind of touch, or by "fomes" or at a distance but "then only, when the skin is so lacerated by the dog's bite that blood is drawn just as though the contagion occurs in the blood itself by the contact of the tooth and spume of the rabid animal."

"Moreover, it creeps so slowly and with such delay that rarely is the infection produced before the twentieth day, generally after the thirtieth, in many not till after four or six months, in some even after a year, and some are said to manifest it after five years. I myself have seen a boy who manifested the contagion, eight months after he had been bitten."[4]

This gives Fracastoro an opportunity to philosophize *more suo*. "Since this contagion is not transmitted by 'fomes' nor does it appear in the skin by simple contact, but requires actual laceration of the skin, we must consider that the seeds of it are not very viscous (*lenta*) and are perhaps too crass to hide themselves in the foramina, and so cannot be agglutinated unless the spume in which the 'seminaria' lie is mixed with the blood itself."

The long delay in manifesting itself is due to its field of action —as "the melancholia is sparser and frigid and dry and less apt to putrefy, it can preserve the 'seminaria' longer."

Pending the manifestation of the disease "no fever is felt, or any other evil, the patient is ignorant that mischief is latent, and he feels it almost for the first time when it reaches the heart." The reason of this, too, is given—"this contagion excites no fever

except at the very end, inasmuch as it is produced gradually (*sensim*) and what evaporates is not carried forthwith to the heart but long after, or it is expelled—it is propagated through part after part to the inside and at length to the praecordia; when it reaches there, it both excites fever and tears the transverse septum and the heart itself and brings on at length furor and death." In another part of this chapter a vivid description is given of the manifestations "quum ea (contagio) ad cor pertingit"—"it strikes the man with incredible torture, the heart and praecordia are torn (*vellicantur*), the sick man can neither stand nor be still, but is rushed hither and thither like a madman, he tears his body with his hands, he has a fearful (*immense*) thirst, but the greatest affliction is that the patient has such a fear of water and all liquids that he would rather die than drink or be taken to the water—then, too, he bites others, covering them with spume; his eyes are wild, and at length worn out, he breathes out his life in misery."[5]

The well known prodomic symptoms in the dog so well described by Youatt[6] are explained—"Dogs are in the highest degree dry (*sicci*) and of adust blood, consequently they are at first trist after the fashion of melancholics, and are solitary; then little by little, the blood heating, they become inflamed against everything, they begin to hate everything, and at length in anger they bite; the eyes are red, the mouth foams, and they are carried into furor."

It may be well to pause here and see what precisely is meant—and that requires us to get into the atmosphere of Fracastoro.

He adopts in his "De Sympathiâ, etc.", cap. V, the atomic theory of Democritus and Epicurus "whom our own Lucretius has followed"—every body continually sends off insensible particles "athomos," "effluxiones," like itself. Assume that putrefaction sets in any body—and in Fracastoroo's philoosophy every contagion imparts a putrefaction (though not *vice versâ*)—the atoms sent off will be of the nature of the putrefaction; if the putrefaction be but superficial, the atoms will be too few to do mischief, but if it be in the substance, "*conclusa,*" the case may be different. If, indeed, the effluent atoms are dry they may not agglutinate, but will disappear singly; if, however, they are glutinous, they will combine and form "seminaria," seed-beds, of contagion. These "seminaria" may act at once in a body to be infected; or they may be deposited on the surface or within the pores of some substance, and thus be preserved with all or much of their virulence for months or even years, to be called into activity as occasion offers. Such substances

on or in which the "seminaria contagionis" settle are called "fomites" (singular "fomes," literally tinder or touch-wood, by Fracastoro also applied to the fuse of a firelock)—they are cloth, bedclothes, wood, etc.[7]

Some contagions have a "spiritual species" enabling them to act at a distance, like the lethal "Catablepha" which can kill a man 1,000 yards away by its glance.[8]

"Seminaria" being formed, they are attracted by their like, their "analogia"; and may at once begin their deadly work in the "analogia." Contagions are of three kinds in respect of infection. (1) all contagions act by contact; (2) some of these also by "fomes"; and (3) a few of these latter also at a distance. Rabies is of the first kind acting by contact only; and that only *sub modo*, because its seeds are very slightly viscous and cannot, therefore, agglutinate on a surface, while they are too crass to be able to penetrate the pores of the skin[9] as most contagions can—consequently to enable the seeds of Rabies to agglutinate they must be brought in actual contact with the blood itself. Fracastoro does not indicate that he thought the disease might be conveyed by incidence of the seminaria-bearing spume with the blood in any other way than by the bite of a dog actually lacerating the skin and drawing blood; but his theory calls for the contagion to be conveyed by an application of the spume to the blood—and, of course, we know such to be the fact. A very curious popular delusion—which I have not met elsewhere—seems to be accepted by the author. He says: "They say (*ferunt*), too, that if anyone who had formerly been bitten by a rabid dog should lie under a sorb tree[10], he would have a recurrence of the rabies" (*rursus in rabiem verti*). An explanation of this phenomenon is made which I give in full as a good example of scientific reasoning four hundred years ago. "Why, then, those who lie under a sorb tree are turned rabid again, if they were rabid at some previous time, has a similar latent cause, at all events if current statements are to be believed. There is nothing to prevent the vapors which constantly exhale from the tree—somewhat styptic as they are, and, if one may say so, melancholic—when they are carried to the man and heated within (*intus calefactos*) to be able to produce the same effect as the "seminaria" of rabies, more particularly in the one who becomes rabid again by reason of the remaining diathesis" (*propter relictam dispositionem*).

The cause of the horror or water, etc., puzzles the author—"Why both the dogs themselves and those bitten by one have such

a fear of liquids—whence they are called 'hidrophoni,"[11] presents a difficulty, the reason is obscure. We should not accept what many assert, which even Aetius[12] seems to believe, that they are in such terror of water because it seems to them that they see certain puppies (*catulos*) in the water—for some of those who had begun to fear water, being asked whether there was anything of the kind to be seen, answered that they could see nothing of the sort.[13] But is it the same sort of thing as happens in some other diseases, i.e., a disgust for something or other arising from indisposition of the stomach or tongue—which occurs in those seized by rabies? Or is it rather that there is no defect or (abnormal) disposition in stomach or tongue—for they are thirsty, and so far as the tongue is concerned, they even seek liquids—but the defect is rather in the phantasy?

A sign of this is that they desire liquids which they do not wish to look at or to touch even as a drink.

It is perhaps the case (as we have said in the chapters De Sym pathia[14]) that the phantasy excites memory of some of the things which are wont to cause fear—this may well happen in rabies, for spume is seen around their mouths and, especially, their hearts melt (*et corde praecipue liquescunt*), from these a certain phantasy is produced of liquid destroying (*extinguentis*) them, whence arises a fear as often as they see or touch liquids or even hear it suggested to give them liquids.

In the sick, indeed, there is occasioned a phantasy of horrible things from small occasions, as often we see the sick looking at small figures on the walls, from the impression (*subimaginari*) that they see wolves and dogs, they cry out and order them to be removed and (as we have said in De Sympathiâ) those things which are dried (*exsiccata*) may desire the humid and may attract it, the form remaining according to nature *per se*, although it is otherwise in act and *per accidens*. Indeed, when siccity has proceeded to such an extent that the form no longer preserves its nature but has fallen away from it, then the very dry themselves not only do not desire the humid but abhor them as contraries and renounce them: just as happens with those near death, when they have such an abhorance of all food and drink that nothing can be offered them more detestable and horrible than food and drink, since their members have now been deprived of their nature, in the same way, so much is done in rabies by exsiccation that the proper nature becomes collapsed and it looks upon what it was accustomed to receive as suitable and good, now as contrary and

horrible; and the phantasy produces not only a dislike of drinking any liquid whatever but an actual abhorrence. It is obvious that those affected by rabies become dried out (*exsiccari*) for they even fall into convulsions from siccity."

This chapter containing the description of the disease ends with the sapient words:—"Atque haec de rabie probabiliter dicta sunt"—and what has been said here of rabies is advanced as probable only.

Treatment.

In Lib III, C. IX, "De Curatione Rabidorum," is given the treatment of those bitten by rabid dogs—the chapter begins:—"There are certain diseases in which unless help is given on the spot as they make their appearance, all medicine will be too late—such are Carbunculi (which the Greeks call Anthrax) and Gangrenes—and especially Rabies of which we are now to speak"; and consequently these diseases should be known to all as well as the remedies which should be exhibited at once.

As though that were not sufficiently terrifying, Fracastoro proceeds: "In Rabies the priests have a better way than physicians; to those who have been bitten when they are brought to them at once, they not only give the consolations of religion but exercising the functions of the medical man and making use of his instruments, they themselves cauterize the place. Therefore, the very first thing that should be generally known is that the bitten part is to be burnt if possible on the spot. It would indeed be better if after the wound is scarified a large cupping glass were applied whereby the virus is extracted and then the wound burnt so deeply that you think the 'seminaria' are reached—this observation being borne in mind that it should be more free where there is much flesh, less so where are many nerves[15] and veins."

The cautery may be made with glowing iron or silver or gold: if the actual cautery be considered too severe (*nimis impium*) by anyone you may effect the object by caustic[16] medicaments. When the place is cauterized, take care that the crust fall away by a cabbage leaf anointed with butter.[17] and in the meantime apply unguents which are at the same time evocative and exsiccant if by chance there should be any remains of the "seminaria" around the locus. All this is to be done at the very beginning. It is not to be ignored that the principia[18] of the disease are very ambiguous and hidden. In some cases the principium is extended to two days,

in others to four, in some even longer according as the disease is more or less acute. Therefore it is of importance to recognize the disease and how long the principium extends, for if the proper remedies are applied during that time, the whole disease will be destroyed. If you think the principium already past and the contagion to have effected deep roots (*altius radices*) the locus is not to be cauterized because by that means the poison will be carried further in[19] but I advise that you scarify and apply evocant and exsiccant plasters not, however, producing blisters—such a preparation as the following:—

R/
Galbani
Serapini
Opopanacis — ana unc. s.
Euphorbii dr. j.
Iridis
Xiridis
Aristolochiæ
Gentianæ — ana dr. j.
Nitri
Sulfuris — ana scr. ij
Ceræ q.s.[20].

As all "seminaria" of contagions infect *materia*[21] analagous to themselves and corrupt it, it naturally follows that by the processes of the disease part of the materia will be made ready for corruption, part actually corrupted: consequently, it is necessary to proceed with medicaments which prevent putrefaction[22] and also with those which evacuate. The best of all the evacuants are the Hieræ[23], either that of Archigenes or that called Diacolocynthidos—also Hellebore than which there is nothing better in this affection if it be exhibited in whey (*sero lactis*). Epithymum is also effective and generally whatever medicines purge the melancholic humor.

The contagion is also prevented by proper exsiccatives, amongst which by reason of its peculiar antipathy all praise the ashes of burnt River Crabs: they praise equally Gentian Root, taken either by itself or with the said powder in white wine—some mix in Thus (frankincense) also, of which medicine use is to be made in every stage of the disease. They also recommend the herb Alyssum, which was given its name because it causes a man to be "without rabies" (*a lussos*)—the Arabs call it Alguasce. Fracastoro

here discusses the different opinions among medical men as to which was the true Alyssum: Rubia, Aparine, Lilialis, Asperula, Syderitis Heraclea, Herba Sancti Joannis, Salvia, False Betonica, Heraclea pratensis—he decides that whatever may be made of Alyssum, those would make no mistake in his judgment who exhibited, in rabies, the lesser Rubia either contused or in a potion with vinegar—it is as useful against rabies as against serpents—nor would they make a mistake who administered Syderitis, because that is a marvellous exsiccant. He says, "Aetius praises Oxylapathum, which was used by a certain old man externally and internally: this is not, however the Oxylapathum which is called acetosa (for that is Oxalis) but that which has the pointed leaves and seed of the Lapatha" (Docks).

Rabies in Dogs.

"Alcon[24] sive de Cura Canum Venaticorum" is a Latin dactylic hexameter poem of 180 verses: in it Fracastoro describes the best kinds of hunting dogs, their training and care including treatment when sick. The dog if bitten by a serpent knows what to do, what grass to seek, how to heal himself without assistance; but when he is bitten by a rabid animal "you must at once yourself add Idaean [25] pitch to rue-leaves and sour wine (*acrique Lyaeo*) and apply these medicaments to the injured part. And when a vile scabies feeds on the wretched limbs of your 'barkers' (Latrantum) and foully burns their miserable body, boil wax, abdomen of an ox,[26] tenacious resin and fresh butter slowly with the green leaves of the lentiscus, and anoint the infected members.

But at this time the prudent mind must be specially careful as, inflamed by madness, he now attacks on all sides, out of his mind, he bites his very master and gives an incurable wound. Accordingly, first of all tie him with a strong chain; then moisten the root of the field rose contused by a heavy stone, with the water of a living spring, so as to present the appearance of a drink made from dark linseed—that taken, they say the dog recovers his senses and becomes again tame, his rabies raving disappeared. Some contund wild figs and old lard; others direct ivy-leaves to be softened in boiling water[27] until one part in three is left and feed the rabid quadruped with the leaves themselves and the tepid water at day-break. But nothing is so effective as to cut out the first seeds of the disease at the very beginning with iron—for at the point where the tongue is seen to be joined to the innermost palate, a

poisonous worm in color like native gold, occupies the fauces, and drives the fierce Molossian [28] hounds to madness suffusing the mouth with venom. If one can cut that out with the knife (*ferro*) he will remove the potent cause of so much mischief and the stimulus of furor."[29]

And thus we leave the Renaissance scholar, poet, physician, mathematician, philosopher, whom an admirer truly describes:

> Longe vir unus omnium doctissimus
> Verona per quem non Maronis Mantuae
> Nec nostra pristis invident jam saecula,
> Virtute summam consecutus gloriam
> Jam grandis aero hic conditur *Frastorius*.

WILLIAM RENWICK RIDDELL.

Osgoode Hall, Toronto, December 2, 1922.

NOTES.

[1]My copies are of the Geneva edition, 1637, Typis Iacobi Stoer, and of the very beautiful Venice edition, 1584, Apud Iuntas—the latter presents difficulties to an inexperienced reader from its frequent contractions: the former has many misprints and makes Fracastoro guilty of solecisms of which he was incapable—he was the best Latinist of his age, an age of scholars.

The Venetian edition omits the "Alcon."

[2]The reference in Galen is in his "De Locis Affectis" (sometimes cited as "Diagnostica," Vol. VIII of Kuhn's monumental edition): in Lib. VI, Galen speaking of affections of the Uterus makes the statement in the Text.

Whether Rabies arises spontaneously cannot be said to be absolutely settled—few negatives can, and theory is against the supposition—nor if it does arise spontaneously is it certain that it is so in the dog alone.

The reference to Aristotle is De Hist. Animal.

[3]"Crasis" is the Greek "Krasis," corresponding to the Latin "Temperamentum," both meaning a mixture of two substances in which the constituents lose their identity like wine and water as distinguished from a mixture in which the identity is retained, like peas and wheat—this the Greeks called "Mixis," in Latin "Mistus" or "Mixtus."

Our words "temperament", "humor", "sanguine", "phlegmatic", "choleric", "melancholy", etc., are the relics of the old theories of humors.

[4]Dioscorides (Pedanius or Pedacius) of Anazaraba probably in the 1st or 2nd Century, A.D. in his "De Venenatis Animalibus", VII, 2, says that the disease first makes its appearance on the fortieth day after the bite of the dog: Sir William Osler, "Prin. and Prac. Med." 5th Edit., 1903, pp. 227, 228, says from six weeks to two months, sometimes three months: he considers the prolongation of the incubation to a year or two years, not definitely settled.

[5]Osler, op. cit., pp. 228-9 gives three stages:—

1. Premonitory stage which Fracastoro ignores in man, when the patient is depressed and melancholy, has headache and loss of appetite, is irritable and sleepless with a constant sense of impending danger—the first symptoms of difficulty in swallowing are observable and a slight rise in temperature and pulse. Fracastoro recognizes this stage in dogs.
2. Stage of excitement described not very differently from our author.

3. Paralytic stage, dumb Rabies, lasting 6 to 18 hours, the patient is quiet, the spasms no longer appear, unconsciousness supervenes, the heart's action becomes weaker and death occurs by syncope. This last stage is described by Fracastoro in the vivid language—"Ac demum fatigati vitam miserabiliter efflant"—and at last, worn out, they miserably breathe out their existence.

[6]The "Canine Madness" of William Youatt (1776-1847), published in 1830, practically a reprint of Articles contributed to the "Veterinarian" must always remain the mine of information on this subject—the author, a distinguished Veterinary Surgeon, was a competent and careful observer, and had the faculty of expressing himself in clear and unambiguous language. The best pre-Pasteur article on Hydrophobia with which I am acquainted is by J. Scoffern, M.B., Lond., formerly Professor of Chemistry and Forensic Medicine at the Aldersgate College of Medicine in his interesting "Stray Leaves of Science and Folk-lore," London, 1870, better known half a century ago than at present but not yet quite out of date.

It must not be forgotten that Pasteur is quite modern: his first inoculation of the human subject for hydrophobia was performed on Joseph Meister, July 7-16, 1885: four children of Newark, N.J., were inoculated by him, December 21, completed January 1, 1886; and returned home January 14, 1886 in safety.

[7]This is not so very unlike our Bacteria, Spirillæ, etc.: but the terminology is odd. Fracastoro does not, so far as appears, accept all the consequences of the theory of Lucretius.

[8]Anything that cannot be referred to a material basis is spiritual—and such must be all agencies acting at a distance. The mythical Catablepha—the word does not occur in any of the dictionaries at hand, Greek, Latin, English, French, German, Italian, or Spanish, neither Stephanus nor Du Cange knows it—is no doubt the Basilisk ("Catablepha" is regularly derived from "kata" against the "blepo" I look). In his "De Sympathiâ", etc. "Cap. IX, Fracastoro answering his own question, "Cur Catablepha homimem ad mille passus conspectum interficiat?" says that its glance is a "spiritual species which is projected to a great distance from itself and on account of the contrariety and antipathy which it has to the spirits of man, it dissolves them and drives them away, whereupon the man dies, too." As like attracts like, so unlike repels unlike: the "spiritual species" of the glance of the catablepha repels the unlike natural or vital spirits of the man, drive them out from the man and he dies.

[9]So long as the insensible particles of a putrefaction are separate, they are harmless—consequently the particles of a rabies putrefaction being very little viscid and therefore non-agglutinative, do no harm outside the body: they require the wetness of the blood to enable them to agglutinate. And they are too large to make their way into the pores of the skin and through them into the blood.

[10]The sorb is the *Pyrus domestica*: on this Continent we have a near relative, the Mountain-Ash, of which the European species, *Pyrus aucuparia*, the Rowan-Tree, had magical qualities in Scotland and elsewhere. Pliny mentions the Sorb, N.H., XVI, 18, 30, 74, but says nothing of this peculiarity.

[11]The spelling "hidrophoui" is found in both editions: but "u" and "v" are the same letter, the form "v" being used as an initial and capital, "u" in all other cases—the word we should now print "Hidrophovi".

[12]Aetius, a very able Greek physician (A.D. 502-575), often called a quack —he wrote much chiefly a compilation of the works of others. See Bass, Hist. Med., Am. Ed., pp. 201, 202. Aetius recommended the Pimpernel, Anagallis Phoenicea, in Hydrophobia. It is said by the American editor of Bass, p, 202, n. 1, that "a decoction of this plant in beer is said to be the chief ingredient of 'Stoy's Medicine for Hydrophobia'." Our common Pimpernel, Anagallis arvensis, is either the same plant or practically indistinguishable.

[13]This was a common idea—the very learned editor of Stephanus' Thesacurus Graecae Linguae, London, 1924, says, Vol. VI, 9336a, that some of those who had investigated the causes of this fear of water consider that the

afflicted man imagines that he sees in the water as in a mirror the reflection of himself with red face, and eyes wild and non-human: but "alii dicunt in iis fieri hydrophobiam, quod canis, a quo morsi sint, imaginem in aqua cernere sibi videantur"—others say that the fear of water is produced in them because they seem to themselves to see in the water, the image of the dog by which they were bitten. He adds—"There are, moreover, those who say that an investigation of this would be idle; that this hydrophobia is nothing else but a kind of insanity from black bile."

It may be of interest to quote here a statement of the famous Lazarus Riverius (la Riviere, 1589-1655), whose Potio Riverii of Lemon Juice and Potassium Carbonate is not yet wholly forgotten—the Parisian Potio effervescens antiemetica dicta Riverii. I take the following from "The Practice of Physick . . . being chiefly a Translation of The Works of Lazarus Riverius . . . " by Nicholas Culpeper, Physitian and Astrologer, Abdiah Cole, Doctor of Physick, and William Rowland, Physitian, London, 1678. At p. 38 in the Chapter "Of a Phrenitis or Phrenzie" we read:—"So the Philosopher that was bit with a mad Dog, and his Imagination began to decay, going into a Bath, perceived the false Image of a Dog therein, but his Reason being sound reproved the error of his Imagination and made him speak thus: What had a Dog to do in a Bath? and presently he cast himself into the Bath by which means he was delivered from the danger of a Disease called *Hydrophobia* or fear of Water."

[14]In "De Sympathiâ, etc.", Chapter XX is "De Admiratione, et ecstasia et risu"; and the author gives many instances of phantasia, imagination, bringing up pictures and occasioning horror, admiration, etc.—the reasons are given, *more suo*.

[15]"Nervi" were more commonly tendons.

[16]Fracastoro gives Lib. III, Cap, 3, a list of Urentia, caustics: verdigris, auripigmentum, chalcitis, chalcanthum, sublimatum, praecipitatum, etc.—for an explanation of these words see note *post*.

[17]Pliny gives the credit of the discovery of the efficacy of a cabbage leaf applied to the spot against the bite of a dog to Epicharmus (circ. B.C. 540) who, the son of a physician of Cos, himself practised medicine for a time and then deserted the profession for comedy: he is said to have written 52 or 53 coomedies—a few fragments are still extant in Athenaeus and elsewhere.

[18]"Principium" and "principia" are used very loosely and often ambiguously by Fracastoro. Here they mean the stage of incubation—not Osler's "Premonitory stage".

[19]In many places Fracastoro warns against bleeding in certain cases because that would set the blood in motion and carry contagion further in. It is not easy for us to get into the atmosphere of those times with the blood stationary in the veins, the arteries full of air, animal or vital spirits carried along the nerves, etc.

[20]For these ingredients and names later in the Text see Glossary *infra*.

[21]"Materia" is substance.

[22]The chief anti-putrefactives of Fracastoro were the Resins, Pitch, etc.

[23]A "Hiera" was a purgative generally containing aloes. We still have "Hiera picra". Many of the old physicians had their own prescription amongst them. Archigenes of Apamaea (A.D. 48-117) mentioned by Juvenal, Sat. VI. 236; XIII, 98; XIV, 252: he was an Eclectic and in therapeutics, Empiric. The Hiera Diacolocymthidos was a compound Colocynth preparation: Dunglison, Medical Dictionary, New Edit., Phila., 1874, p. 501, gives a prescription.

[24]"Alcon" from Alcon son of Hippocoon, and one of those who took part in the hunt of the Calydonian boar: he was killed with his father and brothers by Hercules: Apollodorus, iii, 10, sec. 5.

[25]From Mount Ida in Phrygia—Oenone's "Mother Ida", the scene of the Choice of Paris so fatal to Troy.

[26]"Abdomenque bovis"—perhaps the udder of a cow as "abdomen porcae" was "sumen", udder of a sow.

[27]A poetical way of saying "boil".

[28]About the best hunting dogs were Molossian from Molossia, the eastern part of Epirus. Fracastoro in this poem says:—

* * * * de stirpe Molossa
Quaere canes, Lybicis illis, acresque Britannos"—
Seek dogs of the Molossian kind, with the Lybian and the fierce British.

[29]This venemous worm was known universally—indeed it is still in evidence in the country. Pliny tells us N.H., XXIX, 5, of the worm in the mouth of the dog called by the Greeks "lutta": if it be excised when the dog is young, it does not become rabid. This worm carried three times round the fire, is given to those who are bitten by a mad dog to prevent their becoming rabid. And probably this would be quite as effective as the Talmud's prescription of dog's liver, or Fracastoro's varied remedies—or even Stoy's Medicine for Hydrophobia, itself.

[30]"The one man by far the most learned, through whom Verona need not envy the Mantua of Maro (Vergil) nor our ages the older ones, this our great Frastorius having achieved the height of glory by his merit, is now the property of the ages."
It should not be forgotten that Verona was also the City of Celsus.

GLOSSARY.

Alyssum: (from the Greek "a" privative, and "lussa," madness). A plant variously identified: our Alyssum or Madwort is either A. Maritimum, Sweet Alyssum, or A. saxatile, Rock Alyssum—generally the former.

In Fracastoro's time there was much contention among scholars and scientists as to whether Pliny and Dioscorides meant the same plant by the word Alyssum—the matter is still unsettled (my own opinion, for what little it may be worth, is that they did not).

Aparine: Galium Aparine, Goose Grass, Cleavers.

Aristolochia: Birthwort, several species are bitter, tonic, stimulant and aromatic, once believed to be emmenagogue and ecbolic.

Asperula: seems to have been a small variety of Aparine, *sed qu?*

Betonica: Betonica officinalis (Stachys Betonica) Betony. "False Betony" is either St. Paul's Betony, Veronica Serpyllifolia, or Water Betony, Scrophularia aquatica—here almost certainly the former.

Cera: Wax.

Epithymum: Cuscata epithymum, a kind of Dodder or parasitic plant growing on Thyme.

Euphorbium: A whole genus of the Spurge family is so-called: here it is Euphorbia Cyparissiana (or E. officinarum) Cypress Spurge.

Galbanum: Bubon galbanum (Linn.) or Ferula glabaniflua.

Gentiana: A whole family—the officinal gentian is generally known as G. lutes or G. rubra, yellow Gentian.

Heraclea: Panax Heracla, Opoponax.

Herba Sancti Iohannis: St. John's wort, Hypericum pyramidatum.

Iris: A whole family, the Flags—Fracastoro means the I. Germanica, the common Flower-de-Luce or the closely allied species, I. Florentina (from which we obtain Orris) and I. pallida.

Nitrum: Nitre, impure Sodium Nitrate, KNO_3.

Opopanax: Panax heraclea.

Rubia: Madder, Rubia tinctoria (or sativa). Rubia minor is petty madder, Crucianella.

Salvia: Sage, salvia officinalis.

Serapinum: (or Sagapenum) a bitter red to yellow gum smelling like garlic, once used as an antispasmodic, obtained from the Ferula Persica.

Sulfur: Sulphur, native preferred.

Syderitis (sideritis): Achillea Millefolium, common yarrow, nosebleed or milfoil.

Thus: Frankincense.

Xiris: Iris foetidissima, Stinking Iris, antispasmodic and narcotic.

A Schick Campaign and Its Lessons

By Hugh Grant Rowell, M.D.,
Director of Health and Hygiene in the New Bedford Schools, New Bedford, Mass.

A SCHICK campaign presents nothing new or startling to the medical man to-day since the Schick is an established thing of known value. However, I have recently taken part in such a campaign and since it presents several unique features, I feel it is worth reporting.

In the 1921-1922 school year the New Bedford Board of Health decided upon an extensive Schick and immunization campaign and the work was done by Doctors Croacher, Doran and Canney, to whose excellent work and technic too much tribute cannot be paid. Upon my assuming charge of the medical work in the schools this work was taken over by my department to be completed, the re-Schicking not being done as it was not then due.

Late in the fall of 1922 an attempt was made to offer the re-Schick to such children as desired it, and out of thirty-three schools all but six had been completed when a measles epidemic prevented further activity temporarily.

The statistics of the work were as follows: Under the Board of Health in the public schools 4,175 tests were done, and of these 1,293 were negative and 248 were pseudos, or a tota of 1,541 whom we might call immune naturally. This left 2,534 positives to be immunized.

Of the 2,534 positives the Board of Health physicians gave the complete series of three toxin-antitoxin injections to 1,964, which is 77.1 per cent, and an excellent average to secure. A number of other children had one or two injections.

Here we must make a correction since I now took over the work and have been unable as yet to check up six schools which had a total of 383 positives of whom 252 were given three injections. This would leave 2,151 positives of whom 1712 had been immunized.

Of the 1,712 to be checked up by the second Schick Test, 891 gave permission, and of these 525 were negative, 160 were pseudos which gave a total of 685 successfully artificially immunized. This left 206 who were incompletely protected. Since an immunization

certificate was given to all children believed safe, the tests were read very carefully and a group of 56 showed an exceedingly slight but nevertheless positive action usually about the size of the head of a black pin. This group might be considered almost immunized but naturally could not be given a certificate to the effect that they were safe, although it would probably require very little further toxin-antitoxin to create the desired condition. Figuring in percentages with this close reading 76.88 per cent. were successfully immunized. Had we added the very slightly positive cases (which should not be done), this would have risen to 82.03 per cent.

While stress was laid on checking up the immunized cases, the test was available to all those who desired it, and 411 new children took it. Of these 214 were negative and 42 were pseudos or a total of 236 naturally immune. This left 155 positives to be immunized.

The Board of Health figures last year were 36.91 per cent. negative and 63.09 positive. It is interesting to note that with the very close reading this year, calling even the least reaction positive my percentages were 60.23 negative and 38.77 positive. The other series is larger, but I have no explanation to offer for the variation.

Figuring up the totals we have 1,541 shown to be naturally immune in the Board of Health cases, 256 in this year's series, and 685 of proved artificial immunity. This makes a known group of 2,482 children. The school population is a little over 17,000, of which then 14.6 per cent. is immune.

We have as yet found no case declared immune as a result of the Schick or the immunization series *plus the second Schick* where diphtheria has developed.

A number of important and interesting points came up during the campaign. Decision was made to give the whole matter the utmost publicity and the work was preceded several weeks by a series of newspaper articles. During the work a moving picture was taken of myself and assistant doing the test and the local audiences received it most favourably. The general comment seemed to be that if a child could smile during the whole test it couldn't be so bad. Little opposition was met except the customary circularizing of the teachers by certain opponents of this type of work.

No one was urged to have the test. Explanatory circulars were sent to the parents. If they did not wish it, that was all there was to it. We felt that a privilege was offered, and it was accepted as such. We found many parents anxious to have it

performed, and they frequently called my office to know when it could be done at their child's school.

I believe the most satisfactory way to give the test in any group is to have one person give the toxin and another the heated toxin. This avoids any possibility of confusion, since all material is kept separate. Also if the chairs are so placed that the most comfortable working position is that with the correct arm ready for injection, then another automatic check is added. With this technic the question of confusion is practically eliminated in an almost foolproof manner, and this is of special value when one sees a rare type of reaction where the heated toxin arm gives a slight reaction but the toxin arm shows nothing. This under these circumstances is surely a pseudo while otherwise one is always wondering if the syringes got mixed, however unlikely that might be. In other words, by the above method we avoid even semblance of error in technic.

Each child given the test was given a slip with a description of possible discomforts and given a nurse's number to call. She received no calls.

In a campaign it is unfortunate that through sickness in the child's family or through a cold or other unavoidable absence or other reason, a certain number of the children cannot have their arms read; this however cannot be remedied.

In one respect I do not agree with many authorities. I believe if you give this test you must do so under very strict aseptic precautions. For that reason each arm was thoroughly scrubbed up with green soap and water and then bathed in alcohol. This costs more, but certain arms are dirty anyway, and one misfortune from dirty or careless technic means you are not given the children the service you desire. Every possible care was used to avoid infection and the lack of it repaid the effort.

Certain children presented parents' permission and then declared the parent had changed his or her mind. If one child mentioned this, especially in very young children (who need the test worst) a sort of epidemic might arise. In all such cases we did not do the test, even when the parent offered to be present and see that the child behaved. Tales borne by young children are unfortunately sometimes not strictly the truth. Care in this matter likewise avoids discredit for the test.

When any history of recent disease was given, or even when any skin lesion, especially a septic one, existed, we dd not do the test. It is easier to delay than try to explain any trouble as a result of

existing conditions and not the Schick. The Schick being a new factor is given the blame. By this method we again avoided trouble.

If one remembers the little matters, in no way depending on the test, which can discredit it and avoids these, or in plain English if one uses a little horse sense, the test is simple, the technic is easy, and with the careful handling which it is getting at present, will retain its good repute.

Eventually I believe this work should be done by the family physician or the clinic, and I am sure all of us hope for the day when a Schick outfit will be as necessary as a thermometer.

The causes for failure to have the re-Schick were to a large extent the unfamiliarity with the test on the part of the parent and a belief that the work has already completed. The difficulty with all this work to-day is that the public in general are none too familiar with the newer medicine, and means have not yet been found to enlighten them. The solution lies through the family physician, the popular magazine and the press. It is not unlikely that the new popular medical magazine of the American Medical Association will fill a great need in such matters. At any rate, in spite of all our campaigns of education, we can still justify even greater measures to acquaint the laity with these great possibilities of benefit.

Some Clinical Aspects of Industrial Poisoning

By N. C. Sharpe, B.A., M.B.

(*Continued from March Issue.*)

Amyl Acetate is an ingredient of the "banana oil" preparations used by painters and as a solvent for gums. The effects are usually stated to be those of the nitrite group—namely, headache, giddiness, confusion, drowsiness, nausea, disturbed digestion and palpitation. The Department of Toxicology recently had a case under observation where a museum curator had been using amyl acetate as a solvent for celluloid in the mounting of fish fins. His symptoms were pharyngitis and bronchitis, but without headache, nausea, fulness in head or eye trouble.

The men who complained of wood alcohol effects in shellacing had nausea, unsteadiness in fresh air, dizziness, groggy feeling, aching, smarting eyes, but in no case was there visual disturbance, dilated inactive pupils or changes in colour sense or in the colour fields. The distinguishing of colours and the limitation of colour fields are suggested as early tests of the effects of wood or methyl alcohol.

Rubber workers are exposed to numerous chemcals in different branches of the work. In rubber factories in Toronto aniline was not used. But the "blue men" of aniline poisoning have been reported as occurring in rubber works in Ontario towns. Poor ventilation and high temperature of workrooms play an important part in the production of this poisoning. By instructing the workman that as soon as he notices flushing of the face or nausea or severe headache it is time for him to seek the fresh air and to keep away from analine for the rest of the day, the premonitory symptoms soon disappear.

Antimony poisoning is a possibility in rubber works—it resembles lead poisoning. The chronic type shows nausea, abdominal pain, loss of appetite, diarrhoea, sores in the mouth, salivation, wasting and dizziness. No cases were seen in the Toronto district.

Hexamine tetramine has been used here as a catalyzer in rubber works, and cases of dermatitis have been caused by its use. Carbon bisulphide and carbon tetrachloride are also used as rubber solvents. The early symptoms of carbon bisulphide poisoning

usually consist of transient excitement and slight delirium very like alcoholic intoxication. Later deep depression comes on and if the exposure continues an increasing indifference, apathy or melancholy and weakened memory would develop. Drowsiness and stupidity would then sometimes pass suddenly into acute mania or into melancholia with delusions of persecution. These might terminate in recovery or end in incurable dementia. Such cases usually develop during the first few weeks or months of work. Carbon tetrachloride is less commonly used and is not nearly so severe in action.

Manganese poisoning is a possibility here, although I only know of its use in one plant, where dry batteries are made. But there, despite certain precautions, there was a great deal of the black dust in the mixing room. No case of poisoning has yet occurred as far as I could find out. One man employed for some time has two early symptoms, the languor and sleepiness, and occasionally laughter without cause. Clean cut symptoms are said to occur in one month; permanent disability after four months' exposure. Prevention is possible by working only in a dust free atmosphere, and removal cures early cases. The symptoms are, languor and sleepiness, stolid mask-like faces, low monotonous voice, muscular twitchings, cramps in calves and stiffness in the muscles of the legs, retropulsion and propulsion (an early sign is often that the man finds himself unable to walk down hill slowly), a peculiar slapping gait and occasional uncontrollable laughter or less frequently crying. There appears to be no life shortening process involved; long lived cripples are the rule.

Owing to impurities in the metal, arseniuretted hydrogen poisoning may occur in battery workers employed in the charging room, or possibly in any process where acid acts on metal when either one or both contain arsenic. No cases were found in Toronto. The symptoms are nausea and sickness occurring a few hours after exposure followed by almost continuous vomiting, jaundice, haematuria and in severe cases suppression of urine.

Mercury poisoning may occur in felt hat manufacturing and in furrier trades. The industrial type of poisoning does not have the early intense intestinal manifestations of acute poisoning, but has inflammation of the mouth cavity, pain in the mouth, difficulty in chewing and salivation in the early stages. Loss of appetite and slight diarrhoea may precede these symptoms. Another type of workman may show first the psychic disturbances, timidity, inabil-

ity to work in the presence of strangers, or irritability. Fine tremor of the hands and fingers or slight twitchings of the facial muscles are also early signs of poisoning. No cases of mercury poisoning were seen.

Occupational dermatitis was frequently found. Cases were seen due to fixing solutions in woollen dyes, chromic acid staining and turpentine in varnish rubbing of furniture, metol in photography, chrome ulceration in blue printing, ursol dye in furriers (and also the so-called ursol bronchial asthma) and to the use of denatured alcohol.

In so many cases of industrial poisoning from chemicals, the early subjective symptoms are the same, and there is no known early diagnostic test. This would indicate, then, that an intimate knowledge of the occupation and its risks are necessary for diagnosis in order to remove the man from danger of further absorption —and yet not to unnecessarily interfere with his work. In many of the cases of industrial poisoning (especially the slight acute intoxications from volatile bodies) either no physician is summoned or if he is, the man has frequently recovered by being placed in the fresh air alone. Yet although he seems to have fully recovered, repeated exposures and similar intoxications must undermine his health, and a knowledge of the occupation is necessary so that precautions may be suggested to do away with the exposure if at all possible.

[1]Legge and Goadby—"Lead Poisoning and Lead Absorption," p. 207.
[2]Hayhurst, E. R.—*American Journal of Medical Science*, 167. No. 6, p. 788.
[3]Harris, L. I.—Department of Health, City of New York, Reprint series No. 65. Aug., 1918.
[4]Oliver, T.—Allbutt and Rolleston, Vol. II., p. 988.
[5]Linenthal, H.—Kober and Hanson, "Diseases of Occupation and Vocational Hygiene," p. 98.
[6]Sternberg, M.—Oxford Medicine. Vol. IV.
[7]Laureck—Oxford Medicine. Vol. IV.
[8]Newton—J. A. M. A., 74, 1920, p. 1149.

The Venereal Diseases in Industry

By Dr. J. J. Heagerty, *Chief Division of Venereal Disease Control, Dominion Department of Health, Ottawa.*

INDUSTRIAL physicians give two to ten per cent. as the venereal disease incidence among industrial workers. This would appear to be somewhat low when one considers the usual estimates, and the fact that the majority of men in the industries are of an age when venereal disease incidence is the greatest. It is difficult to make an accurate estimate as the infected employee hides his disease through fear of dismissal. Whenever a systematic investigation has been made, the incidence has been found higher than the figures given. Venereal diseases are common to all classes of workmen, but are more common among unskilled labourers. Syphilis appears as a primary or contributory cause of death in 27% of 1,183 autopsies at the Islip State Hospital, Long Island. Unskilled labourers form a large percentage of all autopsies. The ratio of gonorrhoea to syphilis would appear to be about four to one. These figures apply to male labourers only.

The employee who is suffering from gonorrhoea is a financial loss to his employer as long as his disease continues, for he is unable to work to capacity during that entire time. Apart from the actual pain of the acute stage, he suffers from lassitude, weakness and mental fatigue, which make continued effort at high pitch utterly impossible.

Of syphilis, Oliver says: "It causes a sufficient decrease in the efficiency of the working world to rank it as one of the most important economic problems in industry."

Syphilis weakens and disables, even kills, at the very time when the skill and earning capacity of the employee should be at their greatest; at a time when he should be of the greatest value to his employer, the community and his family. The value of the syphilitic employee to the employer is very considerably less than that of the non-syphilitic and the higher in the scale and the greater the wage, the more marked this becomes. The syphilitic workman suffers quickly from fatigue with concomitant diminution in energy and diminished power of concentration, with the result that his

output is diminished both in quantity and quality. One of the most important causes of accidents and of the loss of working time due to sickness is fatigue arising directly from industrial work. The importance of fatigue in the causation of accidents is emphasized by many investigations.

Adverse influences, such as bad lighting and bad ventilation, have a deleterious influence upon the syphilitic. There is an abnormal sickness and mortality rate attached to certain industries, such as pottery, stone quarries and file-making, and the syphilitic should not work at any of them, as syphilis lowers the vitality and renders the body more liable to deleterious influences. The syphilitic worker begins his day with a physical handicap, and his reserve force is rapidly used up. He gives a minimum output with a maximum effort. The rest periods which are so beneficial to the healthy worker are not so to the syphilitic workman. The type of work materially influences the progress of the disease. Aneurysms are more common among workmen who are doing heavy lifting and neuro-syphilis among the brain workers. All other influences being equal, the life of the syphilitic is shorter than that of the non-syphilitic.

The two most dangerous forms of syphilis are the cardiac and the nervous. These forms progress insidiously during the period of so-called latency, and are frequently far advanced before they are recognized. They are pregnant with danger, not only for the syphilitic individual, but for those with whom he comes in daily contact, as the following case, quoted by Bordley, shows. A man suffering from syphilitic disease of the heart, who was operating the lifting cage in a mine, died suddenly with the result that the occupants of the cage were grievously injured. Heart disease is one of the greatest of the disabling diseases. It seldom arises *de novo*, but is usually secondary to some other condition. The heart affection reacts upon the nervous system and produces fatigue and irritability—causes of accidents. Most writers on the subject of heart disease agree that syphilis is the commonest causative factor in aortitis. Of 37 cases of aortitis studied by Campbell of Belfast, syphilis was found to be the causal factor in 31 cases. The age incidence was greatest between 40 and 50 years. With most cases of aortitis there is an accompanying history of fatigue. The victims are listless and lack the inclination to exertion. There is a lassitude and depression which interfers very materially with their capacity for work. Psychosis, which frequently accompanies syphilitic cardiac disease, is evidenced by

irritability, apprehension, depression and memory defects. The resistance of these individuals is lowered and they are prone to suffer from attacks of minor illnesses, which occasion a considerable loss of time. Aortic cases are liable to transient attacks of giddiness, during which an accident may occur. Mental and emotional stresses may cause a cardiac case to break down as well as physical overwork. Two per cent. of industrial workers have serious heart lesions. As a result of an analysis, by Hala of Brooklyn, of 1,088 cases of death coming to autopsy, it was found that 21.41% showed evidence of syphilis. Cardio-vascular diseases among the adults showed the highest incidence.

Cerebrospinal syphilis is a not uncommon cause of epileptiform attacks in which the employee has suffered permanent injury or caused serious injury to others. Mock reports a death and a serious injury in a steel mill from an overhead crane, both due to defective vision of the operator of the crane, the result of neurosyphilis. It was found that the vision of the operator of the crane was so defective that he had no idea of perspective. One can readily see the importance of the presence of syphilis in the train engineer, the motorman, chauffeur, etc. Head injuries in the syphilitic may result in the development of general paralysis and is of medico-legal importance. Of the 1,183 autopsies at the Islip State Hospital, the primary cause of death was given as cerebral syphilis in 30, and general paresis in 292. It was also shown that general paralysis was a contributing cause in 238 and syphilis in 65 more; a grand total of 625 in 1,183 autopsies.

The development of neurosis and psychosis following minor injuries is apt to occur in the syphilitic. Syphilitic tissue which has been subjected to trauma does not heal as readily as normal tissue. Experience during the war showed that trauma was very often a determining factor in the production of syphilitic lesions. In the production of a gumma spirochaetes must be present either from a previous localization or be brought to the part by a blood effusion caused by the trauma. Pasini reports five cases of gummata following trauma that came under his observation: the first in multiple form in the hypodermic punctures in a drug addict; the second and third in the nates in the injection scars from insoluble mercurial salts; the fourth in the cranial region after a fall, and the fifth in a tibial-personal bone callus after a compound fracture from the bursting of a shell. The industrial physician should recognize the fact that injury is a precipitating cause of general paralysis. The risk of employing a neurosyphilitic is great, such an employee

should never be given a position such as an engineer, or any position of a hazardous nature.

The difficulty of distinguishing between cerebral syphilis and malingering may require a considerable amount of skill. The case is given of an employee who reported to the physician for a head injury, saying that a box had fallen from a shelf and struck him on the head. Two weeks later he again reported with a slight contusion of the cheek, due to a fall, later he reported a scalp wound, due to falling down stairs. A Wassermann test showed that the man was syphilitic and, finally, he confessed that he frequently fell without knowing the cause. He was suffering from cerebrospinal syphilis, which caused his epileptiform attacks.

Industrial accidents are more numerous than is generally thought, and their number should be reduced as much as possible. Burnham, in a survey of 25 factories, with a total of 2,291 employees, in the central part of New York State, found that there were 445 accidents each year. The chief inspector of factories for Great Britain shows that during 1920 there were 138,783 accidents, 1,404 of which were fatal. In 1921 there were 95,565 accidents with 951 fatal results. Quirk says that men often report in the shop hospital with lesions ranging from primary to late tertiary syphilis, claiming them as injuries and disabiltes contracted in the course of their work. These manifestations are a serious charge against industry through loss of time and work. The mass of the world's sickness is practically confined to the workers, yet the amount of work lost by the healthy worker through illness is only from seven to nine working days a year, and the most of this is due to preventable minor illnesses. The time lost by the so-called latent syphilitic is greatly in excess of this.

Accidents due to fatigue, speeding up work and prolonged hours of labour are increased by syphilis, due in great measure to a diminution in the precision and alertness with which the body responds to the necessities of the work. Every accident which lays a man off for a time means that the employer loses the man's work; the man for the time becomes a charge on the community and compensation must be paid; hence the economic loss is great.

It should be our endeavour to reach employees in as great numbers as possible, and point out to them the dangers of venereal diseases, and the possibility of grave complications where treatment has been neglected. At the same time, the fact that free examinations and free treatment are provided in our clinics

throughout the country might be with advantage emphasized. The employer should have some knowledge of the economic loss due to venereal diseases and the advantages that would accrue from periodical examination of his employees.

REFERENCES:

Klauder, (Syphilis and Trauma, J.A.M.A., April 8th, 1922.)
Reports of the United States Public Health Service, December 30th, 1921.
Hala, Incidence of Syphilis, (American Journal of Syphilis, Oct., 1922.)
Gonorrhoea and Syphilis in Industry, Snow, (Nation's Health, August 15th, 1922.)

News Notes

The final meeting of the Section of Preventive Medicine and Hygiene, Toronto Academy of Medicine, was held on March 22nd. Officers were elected for the coming year as follows: Chairman, Dr. H. C. Cruikshanks; Secretary, Dr. D. Fraser; Editor, Dr. J. T. Phair.

Dr. C. J. O. Hastings, Medical Officer of Health, Toronto, has gone to Florida for a month's vacation.

Alex. White, Chief Sanitary Inspector for the Province of Ontario, states that lumber camps were never in a better condition than during the past season, and that the new system of standards are proving a great boon to capital and labour alike.

The Sanitary Inspectors' Association of Canada is endeavoouring to arrange a merging of their public health interests with that of the Canadian Public Health Association, and state much is expected by such a fusion.

Dr. R. W. Bell, Provincial Medical Inspector, Provincial Board of Health, Ontario, has returned from the trip to Bermuda where he went to recuperate after a recent illness.

The preliminary arrangements for the portion of the Canadian Public Health Congress in Edmonton, Alberta, Tuesday, Wednesday and Thursday, June 12th, 13th and 14th, for which the Canadian Tuberculosis Association is responsible, have progressed very favourably. Ten speakers from all parts of Canada will contribute papers devoted to tuberculosis at the special session, Tuesday morning in the MacDonald Hotel. Their subjects will be announced shortly. A ten-minute synopsis of their papers only will be presented. The papers in full will be available in printed form to aid in the discussion. The annual meeting of the Association will be held at luncheon or dinner hour Tuesday. A leading Canadian tuberculosis expert will address the general session on Tuesday afternoon, and another Canadian expert will address the similar session on Wednesday afternoon. Two outstanding authorities from the National Tuberculosis Association will give addresses at the respective evening public meetings of Tuesday and Wednesday. A splendid attendance of tuberculosis workers seems assured, and interest in the meeting is evident to a splendid degree.

The Toronto Social Hygiene Council is in the midst of a drive for 5,000 members. The Council expects to issue a monthly publication for the information of local members in the near future.

The Canadian Social Hygiene Council will undertake campaigns in the Provinces of Manitoba, Saskatchewan and Alberta in the near future.

Plans are under way for a carefully organized series of papers in the Section on Social Hygiene at the C.P.H.A. meeting in Edmonton. Papers are expected from Dr. J. J. Heagerty, Ottawa, Chairman of the Section; Dr. A. H. Desloges, Montreal; Miss Francis Brown, of Toronto; Dr. Gordon Bates, Toronto; Professor J. A. Dale, Toronto; and Mr. Justice Riddell, Toronto, President of the Canadian Social Hygiene Council.

It is expected that Mrs. Pankhurst will address one of the public meetings. It is possible that this meeting will cover the whole subject of Social Hygiene with the three speakers who spoke in New Brunswick: Mrs. Pankhurst, Dr. Gordon Bates and Dr. Heagerty.

It is hoped that in the Section Meeting it will be possible to show slides of stained Spirochaetes, tissues, etc., as well as the various stages of the Wassermann reaction.

Further announcements will be made in the next issue.

Canadian social welfare agencies are planning to send a large delegation from the various Provinces of the Dominion to the fiftieth anniversary session of the National Conference of Social Work which will be held in Washington, D.C., May 16-23.

More than ordinary interest exists in the Conference this year because Toronto is one of the strongest contenders for the selection as the meeting place of next year's Conference. The Conference has met in Canada only once before, in 1897, at Toronto. Toronto extended an urgent invitation to be designated for the meeting place this year, but it was felt by the Conference that its semi-centennial might more appropriately be held in Washington, the Capital City.

Numerous important Canadian persons are members of various committees for this year's session. Dr. C. J. Hastings, Medical Officer of Health, Dept. of Public Health of Toronto, and Dr. C. M. Hincks, of Toronto, Associate Medical Director and Secretary of the Canadian National Committee for Mental Hygiene, are mem-

bers of the Committee on Health. Hon. W. R. Riddell, of Toronto, is a member of the Committee on Law and Government, and Rev. J. G. Shearer, General Secretary, Social Service Council of Canada, serves on the Committee on Industry. Dr. Helen MacMurchy, of Ottawa, Chief of the Division of Child Welfare of the Dept. of Health, and Brother Barnabas, of the Catholic Welfare Federation, Winnipeg, are members of the Committee on the School. Rev. G. C. Pidgeon, Minister of the Bloor Street Presbyterian Church, Toronto, is a member of the Committee on the Church, and Sir Robert A. Falconer, President of the University of Toronto, the Committee on Public Opinion.

Rev. Peter Bryce, who is Chairman of the Mothers' Allowance Commission of the Province of Ontario, is organizing the interest of Canadian social agencies and social workers in the Conference in order to promote membership and attendance.

Dr. L. P. Jacks, Principal of Manchester College, Oxford, England, has been invited as one of the European speakers and delegates.

The general subject of the Conference will be "Social Work in the Life of To-day." Each day of the convention will be devoted to a single topic—the relation between social service and law and government, health, the home, the church, industry, the school, and public opinion. The Conference will aim to show that social work is not a thing apart, but is very closely connected with these fundamental institutions of society, and that the subjects with which it deals have an especially important relation to government, especially the departments dealing with its dependent wards.

Five thousand delegates from Canada, the United States, Cuba, Hawaii, and the Philippine Islands are expected at the meeting. Persons of outstanding ability and wide reputation will be on the programme.

Herbert Hoover, Secretary of Commerce of the United States, is Chairman of the local Committee on Arrangements in Washington.

Reduced rates of railroad fares from Canada have been secured for the meeting from all stations in the Canadian Passenger Assotion, Eastern lines territory, viz.: points in Canada east of and including Armstrong and Port Arthur, Ontario. Requests for information about railroad rates and about the convention should be addressed to William E. Parker, Secretary, National Conference of Social Work, 1714 Pennsylvania Avenue, Washington, D.C., or Rev. Peter Bryce, 73 Grosvenor Street, Toronto.

ONTARIO

The Provincial Board of Health of Ontario

COMMUNICABLE DISEASES REPORTED FOR PROVINCE FOR THE MONTH OF MARCH, 1923.

COMPARATIVE TABLE.

Diseases.	March, 1923. Cases.	Deaths.	March, 1922. Cases.	Deaths.
Small-pox	26	0	113	0
Scarlet Fever	343	17	446	18
Diphtheria	224	29	320	32
Measles	1,227	9	695	4
Whooping Cough	432	24	61	13
xTyphoid	557	22	21	11
Tuberculosis	187	128	172	136
Infantile Paralysis	.....	.....	.....	.....
Cerebro Spinal Meningitis	12	10	8	7
Influenza	.....	317	.....	.....
Influenzal Pneumonia	.....	66	.....	84
Pneumonia	.....	540	.....	409
Syphilis	161	.....	218	.....
Gonorrhoea	178	.....	252	.....
Chancroid	.....	.....	4	.....

xOutbreak at Cochrane 520 cases, 11 deaths.

Dr. W. L. Hutton is Awarded Increase from $3,000 to $3,600

JUDGMENT GIVEN OUT BY HIS HONOR JUDGE HARDY—THE COMPLETE TEXT OF THE JUDGMENT AS PRESENTED—FINDS $3,600 A FAIR AND REASONABLE AMOUNT.

JUDGMENT was given out by His Honor Judge Hardy in the application of Dr. W. L. Hutton, M. O. H., for increased salary. The judgment awards him an increase from $3,000 to $3,600. He had applied to the city for $5,000.

The complete judgment follows:

In the matter of the application of William L. Hutton, M.D., M.O.H., for the City of Brantford.

This is an application by the above-named medical officer of health under the provisions of the Public Health Act, ch. 218, R.S.O., 1914, and amending Acts to have determined the amount of compensation to which he is entitled for services as such official for the City of Brantford.

The sections of the Act directly bearing on the application are sections 39 and 52a.

Section 39 provides that every medical officer of health, whether appointed by the council or by the Lieutenant-Governor in Council, shall be paid by the municipal corporation a reasonable salary to be fixed by by-law.

Section 52a provides *inter alia* that where a medical officer of health claims that the salary paid to him by a municipal corporation is not fair and reasonable he may, after giving such notice as provided in the section, apply to the Judge of the County Court for an order fixing the amount payable to him as salary and upon such application the Judge shall hear the parties and their witnesses and shall make such order as he may deem just and in such order shall settle and determine the salary properly payable to such medical officer of health.

Section 52a, Sub-section 3, provides that the Judge upon the application, shall take into consideration all the circumstances of the case and amongst other matters the physical extent, population and assessment of the municipality.

On the hearing before me there was no contention in regard to the efficiency of the officer in question, it being admitted that no complaint was being put forward as to the capability and performance of the occupant of the office and that the issue was confined to the sole question of the sufficiency of the compensation.

I will first deal with the objection to the application being heard as put forward by counsel for the city on the ground that Dr. Hutton having by his agreement of June 24, 1919, approved by by-law 1539 of June 30, 1919, agreed to hold office during the pleasure of the council and having bound himself to a salary of $3,000 per annum, that he has contracted himself out of the operation of the statute and is barred from making this application.

There would have been much force in this contention had there been in the agreement any reference to the provisions of the statute exempting them from operation, but the agreement on the other hand, specifically provides that the appointment is made in pursuance of the Public Health Act, a very inclusive term, and which embodies the provisions under which the application is here made.

Further, the corporation has from time to time undertaken to vary the contract, having in 1921 increased the salary beyond that fixed by contract and in 1922 placed it below that sum.

The corporation, therefore, cannot now very well be heard to say that the terms of the contract can only be altered by one party to the agreement and that the applicant is deprived of any rights he may have given him by the statute.

I therefore proceed to determine the main question, what is a reasonable remuneration to be allowed for a full-time medical officer of health, the hearing before me having proceeded on the basis of a full-time officer of health, a part-time officer not being discussed.

A considerable volume of evidence was put in both viva voce and documentary, disclosing the character and extent of the duties of a full-time officer, of which I think it would be more satisfactory if I were to mention the cardinal features.

The act lays upon the M. O. H. responsibility for the due carrying out of the act, and among other duties, for the purity of the milk and water supplies and the due safeguarding of the citizen in the disposal of public sewerage. Dr. McCullough, Chief M. O. H. for Ontario, in his evidence, was very emphatic in his declaration that what Dr. Hutton had accomplished in regard to the milk supply was alone worth his salary, which he considered should be $4,000. Dr. McClenneghan, District H. O., putting it at $4,500.

Dr. Hutton claims that when he returned from overseas in 1919 and accepted the position at $3,000, it was fully expected that the cost of living would shortly resume pre-war prices. This had not been realized and he and his family were unable to live on the present salary.

In 1921, 284 tests of milk were made, the butter fat being increased 23 per cent. over the previous year, increasing the supply of cream thereby to the consumers of milk by 12,147 quarts, of the value of $7,884. In 1922, 429 tests were made, the improvement being continuous.

The water supply has been subject to continual tests, the city being free of typhoid, 478 bacteriological examinations having been made.

In 1921, 1,500 were vaccinated for smallpox, during which the medical health officer was in attendance on 214 cases.

Infectious diseases among school children have demanded much attention in the past two years, over 2,000 exclusion notices were issued, each case requiring careful diagnosis and examination. This system has been organized by Dr. Hutton and during the past three years he has dealt with a yearly average of 768 cases of infectious diseases

Investigations as to sanitary housing conditions.

Establishing of venereal disease clinic.

The study of cases and prevention of diphtheria.

Tuberculosis and venereal diseases, and making 448 laboratory analysis in the past year.

There is also a continuous demand for services in those agencies of preventive medicine connected with the Social Service League, Red Cross Society, examination of under-nourished children, and other remedial agencies.

There is much to be done in furthering health propaganda and in giving the public information by addresses and otherwise for maintaining the standard of community health.

According to the testimony of Dr. McCullough, efficiency cannot be obtained from a part-time officer, that it is necessary to have permanency and continuity in service to obtain results, that the longer an officer has experience in the work, coupled with his study of local conditions, the more valuable he becomes, and that he viewed Dr. Hutton's work in Brantford as exceedingly satisfactory.

He considered the eight full-time officers in Ontario much underpaid and gave the following salaries as paid by the following municipalities:

City.	Popltn.	Sal.	Cost per head.
Brantford	31,362	$2,960.00	.43
Ottawa	107,843	5,000.00	1.64
Essex Border Municipalities	60,000	5,000.00	.60
London	69,959	5,000.00	.35
Fort William	19,886	3,725.00	.84
Port Arthur	15,094	3,300.00	1.15
Hamilton	108,143	5,000.00	.57
Toronto	449,278	8,000.00	
Asst.		6,000.00	1.65

In Hamilton the officer has 33 assistants, in Brantford, there are three.

Having heard the arguments of counsel and having duly considered the evidence submitted and weighed the factors prescribed by statute, the area of the city, its population and assessed value, not omitting such other circumstances as the prevailing rate of taxation, the continued high cost of living, the special training and skill demanded in the execution of his office, the extent and quality of the service rendered and the amounts paid for similar service by other municipalities, I am of opinion that the sum of thirty-six hundred dollars ($3,600) per annum is, under existing conditions, a fair and reasonable sum to be paid the applicant for services as medical officer of health for the City of Brantford.

And I fix the 1st day of March next as the period from which the said rate of compensation is to commence, and the order will issue accordingly.

A. D. HARDY,
Judge, County Court of Brant.

Brantford, Feb. 21, 1923.

Notes on Current Literature

From the Health Information Service, Canadian Red Cross Society.

Administration of Health Departments.

A section from the forthcoming report of the Committee on Municipal Health Department Practice of the American Public Health Association. "American Journal of Public Health," March, 1923, page 163.

Epidemiology and Health Departments.

The importance of epidemiology as a function of health departments, by Wade H. Frost, M.D., Surgeon, United States Public Health Service. "The Medical Officer," March 10th, 1923, page 113.

How Sanitation Aids Public Health.

An address delivered at the recent Public Health Exposition in New York City on the importance of water supply, sewage and garbage disposal in the promotion of public health. "Monthly Bulletin of the Department of Health, New York City," February, 1923.

Health Score for School Children.

The report of the United States Public Health Service for February 16th, 1923, contains a description of a new score chart for school children and the method of use.

Milk Supply.

Town and country milk supplies: What is needed for their improvement. By John Robertson, C.M.G., O.B.E., M.D.,B.Sc., Medical Officer of Health for the city of Birmingham, Professor of Public Health in the University of Birmingham. "The Medical Officer," February 10th, 1923, page 63.

Home Care of Communicable Diseases.

By Miss Clara D. Noyes, American Red Cross. "The Health Builder," April, 1923, page 471.

Industrial Fatigue.

Fatigue as a factor in causing disease as well as social and economic loss. By Louis I. Harris, M.D., Director, Bureau of Preventable Diseases, New York City Department of Health. "Monthly Bulletin of the Department of Health, New York City," January, 1923, page 7.

Industrial Medicine in 1922.

A review of the progress of industrial medicine in 1922, by W. Irving Clark, Jr., M.D., Medical Director, Norton Company, Worcester, Mass. "The Journal of Industrial Hygiene," March, 1923, p. 474.

The Control of Cancer.

An address presented before the Academy of Medicine, Toronto, by Colonel Alexander Primrose, Professor of Clinical Surgery, University of Toronto. "The Canadian Medical Association Journal," March, 1923, page 160.

Drug Addiction.

The Truth About Drug Addicts," by Thomas S. Blair, M.D., Chief, Bureau of Drug Control, State Department of Health, Harrisburg, Pa. "Health," March, 1923, page 27.

Health Visitors.

A general account of the work of a health visitor in England. "Maternity and Child Welfare," March, 1923, page 89.

Public Health Nursing.

The work of the public health nurse in rural districts in controlling communicable diseases. "The Public Health Nurse," March, 1923, page 122.

Book Reviews

Animal Parasites and Human Disease. Asa C. Chandler, John Wiley & Sons. Second Edition, 1922. Price, $4.50.

The growing importance of Parasitology with reference to human disease has made it essential for all those interested directly or indirectly with public health to have some knowledge of the subject. The prevention and control of Malaria and Hookworm Disease in America alone constitutes such an enormous problem that measures that are adopted for its achievement should be known both to the economist and those associated with preventive medicine. The book has been written in a style such that the non-scientifically trained person may readily grasp the significance of the subject. The principles underlying the spread and control of parasitic diseases are clearly outlined. The author has succeeded in portraying some of the romance of discovery and the self-sacrificing devotion of experimenters in this field. The seconod edition has new material added. The subjects of Amoebiasis, Yellow Fever, Typhus and Trench Fever have been brought up to date.

The book comprises over five hundred and fifty pages, well illustrated with some two hundred and fifty figures. As a text or reference book it is well adapted for use in medical schools.

Editorial

THE ANNUAL MEETING.

On the 12th, 13th and 14th of June the Annual Meeting of the Canadian Public Health Association will take place in Edmonton, and it is to be hoped that many members of the Association will take advantage of the opportunity to unite with their fellows interested in the great cause of public health and to discuss the many problems envolved.

The trip through the Great West will provide an opportunity for many Easterners to get a new conception of the vastness of Canada. Old friends will meet, old difficulties will be overcome and new ideas will be gained at the interesting sessions being planned by the local committee. A detailed account of the programme is not yet available, but will appear in the next number of the PUBLIC HEALTH JOURNAL.

NEW CONCEPTIONS.

There is no question but that in the profession of medicine today great changes are imminent. We stand at the parting of the ways. Organized curative medicine interpreted as the ideal form of organization for the profession has had its day. Preventive medicine must be the ideal of the physician of the future.

Sir James MacKenzie, in his recent book, "The Future of Medicine" as quoted in *Public Health*, the organ of the Michigan Department of Health, pictures disease processes as falling into four distinct stages.

First: The Predisposing Stage. The stage in which the individual is as yet *free* from actual disease, but liable to be attacked either from some inherent weakness or from some outside source.

Second: The (true) Early Stage. When the disease has entered the system, but has not produced as yet any perceptible alteration of tissue and the signs the disease produces are mainly subjective or symptomatic—and states that *this* is the curable stage.

Third: The Advanced Stage. Destruction or modification of tissue and its presence revealed by physical stages.

Fourth: The Final Stage. When the patient is dead and post mortem study is in order.

Sir James goes on to point out that the chief end in medicine to which all endeavours should be bent is the prevention and actual cure of disease, and that this objective has not been clearly recognized by medical men because their greatest efforts have been directed to the more urgent calls for the relief of suffering and already impaired health. The necessity for observation and advice for the average citizen before he becomes ill in order that he may remain well has obviously not been recognized by the average physician.

At the same time a group of physicians working largely in health departments have seen the necessity for early preventive methods and for the organization of advice and treatment in order that the spread of disease may be prevented, and incipient complaints dealt with before they become serious. This conception has resulted in a system of free supervision and treatment with the great aims of "prevention" in view.

Unfortunately, anything that is free or anything that is preventive, is greeted with suspicion by the more conservative type of physician who seems to feel that his practice is being interfered with, and that prevention is, to say the least, a freakish idea with which he certainly has no concern. Misunderstandings and friction have often resulted.

This state of affairs is almost inevitable in any transitory stage. The main thing to remember is that prevention must always be the ideal condition, and that as the machinery of prevention completed, will mean a saner, happier, healthier human race, so will the physician, a more useful citizen than ever, more richly deserve the encomiums and respect of his fellowmen. The economic phase will in due course take care of itself by gradual adjustment of methods of remuneration.

Provisional Programme of the Ontario Health Officers' Association, May 21, 22 and 23, 1923

Physics Building, University of Toronto, Toronto

MONDAY.

First Session—

10 a.m.—Welcoming and registration of delegates.

10.30—Moving Picture.

11.00—Remarks by the Chief Officer of Health.

11.30—Dr. R. R. McClenahan, Director of Division of Preventable Diseases, Provincial Board of Health. "Method of handling a typhoid epidemic from the medical standpoint."

11.45—Mr. F. A. Dallyn, C.F., Director of the Division of Sanitary Engineering, Provincial Board of Health. "Method of handling typhoid epidemic from the Sanitary Engineer's standpoint."

12 noon—Address by representative of the Ontario Medical Association.

Luncheon—At Hart House at 1 p.m. (The members will be the guests of the Provincial Board of Health.)

Second Session—

2 p.m.—Presidential address, Dr. D. V. Currey, M.O.H., St. Catharines.

2.30—Mr. Wills MacLachlan, Toronto, "Resuscitation." Illustration of Schaefer method.

3.00—Dr. H. F. Vaughan, M.O.E., Detroit, Mich.

TUESDAY.

Third Session—

9 a.m.—Moving picture.

9.30—Dr. James Roberts, M.O.H., Hamilton. "The Schick Test and Active Immunization against Diphtheria."

10.00—Dr. J. G. Cunningham, Director, Division of Industrial Hygiene, Provincial Board of Health. "The Part-time Physician in Industry."

11.00—Dr. W. L. Hutton, M.O.H., Brantford. "Smallpox."

11.30—Mr. F. A. Dallyn, C.E., Director of the Division of Sanitary Engineering, Provincial Board of Health, "Rural Water Supplies."

Fourth Session—

2 p.m.—Cancer Symposium.

A paper will be read by Dr. Adam Wright, ex-Professor of Obstetrics, University of Toronto, Chairman of the Provincial Board of Health. After the reading of Dr. Wright's paper a full discussion will be held with the following gentlemen taking up the subject from various angles: Surgical aspect—Professor Clarence Starr, University of Toronto. Medical aspect—Dr. Wm. Goldie, Toronto. Gynaecological aspect—Dr. F. A. Cleland, Toronto.

3.30—Dr. H. W. Hill, Western University, London, Ont., "Milk." Discussion will follow.

WEDNESDAY.

Fifth Session—

9.00 a.m.—Moving Picture.

9.30—Dr. H. Ross, M.O.H., Clifford, Ontario.

10 a.m.—Dr. H. S. Thompson, Dental Research Department, University of Toronto. "Dentistry and Health."

10.30—Symposium on Tuberculosis.

Dr. Harold Parsons, of Toronto, will deal with the subject under the heading of "Tuberculous Contacts." "The Pathology of Mediastinal Tuberculosis" will be discussed by Dr. I. H. Erb, pathologist to the Hospital for Sick Children, Toronto. "Tuberculous Infection in Infancy and its Effects" will be discussed by Dr. A. Davis, of Toronto. A discussion will follow.

Sixth Session—

2 p.m.—Mr. S. J. Manchester, Director of Vital Statistics, Registrar-General's Department. "Vital Statistics and Causes of Death."

2.30—Dr. F. G. Banting, University of Toronto. "Insulin in the Treatment of Diabetes."

D. V. CURREY, *President.*
T. A. LOMER, *Vice-President.*
J. J. MIDDLETON, *Secretary*

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Vitamins

From the Days of Columbus to This Present

By Franklin Royer, M.D., Sc.D.
Executive Officer Massachusetts - Halifax Health Commission, Director of Public Health Nursing, Dalhousie University.

and

Jean Lindsay, A.B.,
Secretary, Massachusetts-Halifax Health Commission.

EVER since sailors and explorers journeyed far and wide over uncharted seas, and into strange, distant lands, there kept pace with them, that grim and deadly Nemesis Scurvy, only waiting the approach of hunger and exhaustion to turn and rend them.

The discovery of a simple cure for Scurvy was probably quite accidental and the recovery of the sufferer would seem little short of miraculous. In a general way its cause was known and a remedy was available as early as 1720 when Kramer, Chief Surgeon with the Austrian Army in Hungary summarized his experience in the following quaint paragraph:

"If you can get green vegetables, if you can prepare a sufficient quantity of fresh, anti-sorbutic juices, if you have oranges, lemons or citrons; or the pulp and juice preserved with whey in cask, so that you can make a lemonade, or rather give to the quantity of 3 or 4 oz. of their juice in whey, you will without other assistance cure this dreadful evil."

Up to the latter part of the 18th century, thousands of cases of Scurvy were reported annually. By 1804, the simple remedy noted by Kramer had become so well known that the British navy prescribed a regular issue of lemon juice for its sailors, and within a very few years, scurvy became a comparatively rare disease.

WHY?

One of the unfortunate by-products of modern civilization has been the growth and spread of the disease Beriberi in the East. Takaki, Surgeon-General of the Japanese Navy was finally authorized to investigate the cause of its spread among the Japanese sailors. He reduced the amount of polished rice, increased the allowance of meat, fish, vegetables and added milk and flour. The change of diet produced marvellous results, which Takaki attributed to the addition of more nitrogenous foods.

In 1897 Eijkman, medical officer to a prison in Java where polished rice was the principal food, and where many Beriberi cases occurred, noted that the fowls which fed upon the rice refuse suffered from a similar disease. When he fed the fowls the rice husks they recovered. He found further, that when they were fed the entire rice kernel, the disease did not develop. Later U. S. Army officers working in the Philippines cured the Filipinos suffering from Beriberi with rice husks. These experiments established that the polished rice was a direct cause of the disease, and therefore that we must blame modern milling methods for its spread.

WHY?

Let us come down to Nineteen Hundred and Now, as Vance Cooke says. Once there was a Modern Parent who was trying to bring up his child in the way she should go. Somebody had told him that Mary should have a carefully balanced diet, so many calories of proteins, so many calories of carbohydrates and so many calories of fats and so on. Somebody else had told him that germs were dangerous things. So Mary's food was carefully balanced and sterilized. But Mary didn't thrive and was always ailing. Then some ignorant woman—probably the wife of a Professor—told the Modern Parent's wife to give Mary every day a little Raw Cabbage —of all things! And the Modern Parent's Wife did; but she didn't tell the M. P. And little Mary got better.

WHY?

What was in the cabbage that wasn't in her former diet? What was in the Filipinos' unpolished rice? Why did the lemon juice cure the sailors?

Little though we knew it, one answer had been given before we really got puzzled about it. In 1881, Lunin wrote—"They (mice) are unable to live on proteins, fats, carbohydrates, salts and water. It follows that other substances indispensable for nutrition must be present in milk."

In 1911, Casimir Funk, a Polish chemist, precipitated rice polishings, until there was left a very small quantity of a crystalline substance which speedily cured pigeons afflicted with experimental Beriberi. After further experiments along similar lines. Funk leaped to the conclusion that Beriberi, Scurvy, Rickets, etc., were due to the lack of a specific chemical substance, to which he gave the name "Vitamin."

For ten years, food chemists in their laboratories have been seeking these "other substances." From all over the world the answers to our questions have come syllable by syllable.

The basis of all recent experimental work consists in giving certain animals, notably the guinea-pig, the rat, the pigeon, and the puppy, a diet, from which by careful experiment, it has been proven that one or more of the vitamins is absent, and noting the loss of weight, tooth-changes, and the first evidences of dry-eye, scurvy or other disease. Also, at the same time, for the purpose of comparison, similar animals (controls) are fed upon vitamin-rich foods of the same variety. One experiment takes from sixty to ninety days, and it must be repeated many times by several trained investigators in order to confirm the results. In this way, all our foods are being tested to show their comparative value as vitamin-containers.

There has been a difference in the terminology employed to designate these "other substances." Many objected to Funk's term Vitamin (originally spelled Vitamine) as inaccurate. McCollum's Fat Soluble A and Water Soluble B are cumbersome. Other research workers have employed such terms as Food Accessory Factor and Growth Determinant; but neither of these are wholly free from criticism. The common usage seems to have become Vitamin A, Vitamin B, Vitamin C, and—Vitamin D.

Most authorities now agree that there are four of these Vitamins. They possess definite chemical unity, but strange as it may seem, they have never been and may never be isolated.* They are present in very small quantities, but exercise an influence disproportionate to their amount. Absence of them from our diet disturbs the functions of the body, and will in the end bring about a diseased condition.

Much still remains to be discovered. Vitamins A and B are being studied to find out if each is, not one alone, but two, with distinctly separate functions. Other scientists are tracing the earlier effects of a Vitamin-deficient diet. Their findings to date

*Kagawa (Progrès Medical, Dec. 23, '22) reports isolation of Vitamin A from Cod Liver Oil by Katsuya Takahashi.

seem likely to exert a great influence in both medical and dental therapeutics. They are also applying the theory of vitamin deficiency to other diseases in an effort to explain them, and if possible prevent their occurrence. Truly it is a wide-extending field of research, filled with possibilities for good to the world of men, women and children.

The Algebraic X of Our Diet.

Scientists all over the world have found it difficult to frame a definition for the newest, and most elusive of food substances the Vitamin. Try as they will, in their laboratories, they have never been able to isolate it. How can we define what we cannot see with our eyes, or at least examine under the microscope? We can only list their positive and negative attributes, as they have been discovered after countless experiments. The mechanically inclined of us—and that includes most men and some women—will find it worth their while to compare this body of ours to a gasoline engine:

"The organic nutrients, fats, carbohydrates and proteins correspond to the fuel; the proteins and some of the mineral matter to materials of which the motor is made; and the vitamins to the ignition spark whose own energy is insignificant, but without which the engine cannot run however fine the material of which it is built or however abundant and appropriate the supplies of fuel and of lubricant." (Sherman: Vitamins, p. 206.)

Four vitamins have been definitely proved to be present in our foods. They are known chiefly in the pathological conditions resultant from their absence—Fat Soluble A, a continued lack of which causes Xerophthalmia; Water Soluble B, which is rice polishings for instance prevents Beriberi; Water Soluble C, known as the anti-scorbutic vitamin. It has recently been demonstrated (McCollum, August, 1922) that Cod Liver Oil, always considered a valuable source of Vitamin A, contains the fourth vitamin which cures Rickets in contrast to Butter Fat which is also rich in Vitamin A, and which does not possess this curative power. Vitamin D must be fairly stable as it is not lost in the process of manufacturing Cod Liver Oil.

The evidence being heaped up is conclusive that a vitamin deficient diet produces disturbances of certain cell functions which will eventually result in disease. Through our little dumb friends, the guinea-pig, the rat and the puppy, it has been absolutely proved that a diet deficient in Vitamin A or C, seriously affects the struc-

ture and texture of the teeth and predisposes one's teeth to decay. It is a matter of fact that the children of European immigrants, who have never used a tooth-brush—please note that—usually have strong, white teeth. It is also a fact to be regretted, that children in our public schools, even those who have been trained to use the tooth-brush, possess many decayed teeth. They tell us that the reason for this is that the little immigrant children have always eaten what we call crude foods and no sweets, and that the children of this country eat refined foods and many sweets. Therefore—but we will leave it to the reader to supply the conclusion.

Boys and Girls! Please come this way!
Vitamins are here to stay!
Though they have a strange new name
They are old friends just the same.
You will find them full of fun.
Can you name them, every one?

How much vitamin-containing food must be eaten in order to secure our necessary quota of vitamins? Our daily meals, if containing vitamin rich foods should supply along with the other essentials, the requisite amount. Many of the authorities have stated in their writings that only one of the vitamins is likely to be absent from the average simple diet, and that is Vitamin A. According

to the results found by scientific experiment, milk is the most important food containing it. Most adults consume a very small quantity of milk in tea and an additional small amount in the form of butter. Spinach and eggs are the only other two foods that have been thoroughly examined which provide us a superlative amount of Vitamin A. Whole wheat is an excellent source of this vitamin, but not so good as the three mentioned. The only meats containing an appreciable amount are Kidney and Liver, which are not often enough on our tables. What are known as the Leafy Vegetables—chard, dandelion greens, lettuce, for example, all furnish good amounts of Vitamin A. The other vegetables are rich in Vitamin B, but there are some of those which are equally rich in Vitamin A—Tomato, that "king" of vegetables and fruits, carrots, string beans, peas and sweet potatoes. Vegetables are a source of food supply that are generally neglected, but we have only to add them in more abundance to our menu to fortify ourselves against the dangers of vitamin deficiency. And, let us repeat, don't forget milk—especially for children and young people—Milk the one perfect food, designed for that purpose alone. A quart a day, to use the Old Country phrase—an Imperial Quart—is not too much for every child.

We are not apt to suffer from vitamin starvation during the summer months. Then it is that we all indulge in fresh fruits and vegetables from our garden or the green market; but during the winter months, certain fruits and vegetables are often unobtainable. Fortunately the orange is always with us, and many of the winter-kept vegetables, cabbage especially, are valuable sources of the vitamins. Tomatoes, even canned, are rich in Vitamins A, B and C. Investigators are now testing the efficacy of the various vegetables and fruits after canning. The results so far are most encouraging. A high temperature, when not long continued, and especially if the process excludes air, does not seriously affect Vitamins A and B. Still better results are obtained by drying. One cannot begin to estimate the immense amount of good that will result if it is scientifically established that vegetables and fruits may be dried and packed and retain excellent nutrition value months after.

But how can the body obtain substances essential for its nourishment, if we peel our vegetables, and, as if that were not enough, give them a long boiling in a full kettle of water which is drained off and poured down the sink. As a prominent American dentist said in the course of an address—"If the drainpipe had a digestive

apparatus, it would be perfectly nourished, for it gets the real material while the family gets the refuse." Put as little water as possible on vegetables. The moisture remaining on spinach and chard after washing is almost sufficient for them. Save for soups any water that has to be drained off. Even taking every precaution, we do lose some of the vitamin content. Vitamin B is fairly stable, and in Whole Wheat Bread for instance, we get its full quota.

Vitamin C is volatile, and is best obtainable in uncooked foods, such as fruits and vegetables. It is kept in tomatoes and citrous fruits after cooking because of their acid content. Pasteurized milk loses most of Vitamin C, but preserves practically all of A and B.

For the safety of the community, milk must be pasteurized. The addition of orange or tomato juice to the diet of infants and small children will supply what has been lost by pasteurization.

Therefore—Use more of the natural foods: cook for as short a time as possible: and don't let the drain pipe be better nourished than your family.

An Authoritative Tabulation.

Professor H. C. Sherman has just written a book on Vitamins, which is the most exhaustive treatment of the subject that has yet been published. To the man on the street and the woman in the

home, the most interesting and practicable chapter is the last—"Vitamins in the Problem of Food Supply"—and from it we have taken in great part the table of foods which is appended:—

	"A"	"B"	"C"
GRAIN PRODUCTS			
Barley, Whole	+	++	−
Bread, White, (Water)	?	+	−
Bread, White, (Milk)	+	+	?
" Whole Wheat, (Water)	+	++	?
" " " (Milk)	++	++	?
Corn, Yellow, Whole	+	++	−
Flour, White	−	+	−
Oats	+	++	−
Rice, polished	−	−	−
" whole grain	+	++	−
Wheat, middlings	−	+++	−
" bran	+	++?	−
" whole	+	++	−
SUGARS AND STARCHES			
Honey	−	+	−
Starch	−	−	−
Sugar	−	−	−
FATS AND OILS			
Beef fat	+	−	−
Butter	+++	−	−
Cod Liver Oil	+++	−	−
Lard	+?	−	−
Margarine, Nut	−	−	−
" " Oleo	+	−	−
Mutton fat	+	−	−
Olive Oil	−	−	−
MEATS AND FISH			
Brains	+	++	+?
Fish, Lean	−	+	⊙
" Fat	+	+	⊙
Heart	+	+	+?
Kidney	++	++	+?
Liver	++	++	+
Meat muscle	+?	+?	+?
" extract	−	−?	−
" canned	−	slight	−
Roe, fish	+	++	+?
Sweetbreads	+	+	⊙
NUTS			
Almonds	+	+	⊙
Brazil nuts	−?	++	⊙
Cocoanuts	⊙	+	⊙
Filberts	⊙	++	⊙
Peanuts	+	++	⊙
Pecans	⊙	+	⊙
MILK			
Milk	+++	++	+var.
Milk, evaporated	+++	++	−var.
Milk, dried, whole	+++	++	+var.
Milk, skimmed	+	++	+var.
Butter	+++	−	−
Buttermilk	+	++	+var.
Cream	+++	++	+var.
Cheese	++	⊙	⊙
Curds	+	⊙	⊙

	"A"	"B"	"C"
FRUITS			
Apples	+	+	+
Bananas	+?	+?	+?
Grape juice	⊙	+	+
Grapefruit	⊙	++	++
Lemon juice	⊙	++	+++
Limes	⊙	+	+
Orange juice	+	++	++
Orange peel	+	+	++
Pears	⊙−	+	⊙
Prunes	⊙	+	−
Raspberries	⊙	⊙	+++
" canned	⊙	⊙	+++
Tomatoes, raw	++	+++	+++
" canned	++	+++	+++
VEGETABLES			
Alfalfa	+++	+++	⊙
Beans, Kidney	⊙	+++	⊙
" Navy	⊙	+++	−
" String, fresh	++	++	++
Beets	⊙	+	⊙
Cabbage, fresh, raw	+	+++	+++
" cooked	+	++	++
Carrots, fresh, raw	++	++	++
" cooked	++	+	+
Cauliflower	+	++	+
Celery	⊙	+	⊙
Chard	++	+	⊙
Cucumber	⊙−	+	⊙
Dandelion greens	++	++	+
Endive	+	⊙	+
Lettuce	++	++	+++
Onions, raw	⊙	++	+++
" cooked	⊙	++	++?
Parsnips	−?	++	⊙
Peas	++	++	+?
Potatoes, boiled	⊙	++	+
baked, or cooked	⊙	++	+
Potatoes, sweet	++	+	⊙
Radish	⊙	+	⊙
Rhubarb	⊙	⊙−	+
Turnip, swedish	−?	++	+++
" white	−?	++	⊙
Sauerkraut	⊙	⊙−	−?
Spinach, fresh	+++	+++	⊙
" dried	+++	++	⊙
Squash, Hubbard	++	⊙	⊙
EGGS			
Eggs	++	+	+?
Egg white	⊙	⊙	⊙
" yolk	+++	+	⊙
" dried	++?	+?	−?
YEAST			
Yeast	−	+++	−
Yeast cakes	−	++?	−
" extract	−	+++	−
Beer	−	−	−

\+ contains the vitamin
++ good source of the vitamin
+++ excellent sourse of the vitamin

− no appreciable amount of the vitamin
? doubt as to presence or relative amount
⊙ evidence is lacking or appears insufficient

It will be noted that Vitamin D is not listed. It has been so recently separated that investigators have not had time to prove its presence or absence in many foods.

Some interesting and surprising conclusions can be drawn from the above table, the most important being the overtopping superiority of milk, fruit and green vegetables, and the inferiority of meat as to Vitamin content. The popularity of meat is due as much to its taste as to its protein and fat content. A diet consisting largely of bread-stuffs and cereal is more effectively supplemented by vegetables than by meat. The purchase of more fruit and vegetables is good economy as well as good hygiene. Milk is the one article of diet whose sole function in nature is to serve as food and the one food for which there is no satisfactory substitute. The one responsible for the dietary should first of all provide an adequate supply of milk and vegetables and fruit, after which breadstuffs, meat, fats, and sweets may be added according to taste, energy requirements and individual purchasing power.

From Drug Store or Green Market—Which?

"What shall we eat? and What shall we drink?" are still all-important questions to the world at large, but we are often quite bewildered by the contradictory answers. For this reason, it is reassuring to hear the voices of the scientists in unison on the existence and the importance of Vitamins in our daily food. Innumerable articles have been published in our magazines, ranging from the strictly technical to the simply popular; and he must be a careless reader indeed who has not found an article at some time in his favorite magazine.

The twentieth century public is intensely interested in its well-being, and is always trying new remedies, practising physical exercises, adopting all kinds of fads, some good, some harmless and some dangerous—and, as was inevitable, it has now turned its attention to Vitamins.

No one is more alive to this weakness of the public than the patent medicine manufacturers. The public are interested in vitamins; the public think vitamins will benefit their health. The public will therefore, so they reason, seek vitamins in a drug store; very well, in a drug store they shall find them. When the seeking public goes to the drug store, they find that the patent medicine manufacturers have been there before them and can supply their demand.

"The claims of these preparations are extravagant and misleading," to quote McCollum. They profess to be remedies for nearly every ill of the flesh. It is probable that the makers of these pre-

parations do not fully realize the nature of the substances which they claim to sell. It is impossible to separate vitamins and compound them into a preparation since vitamins have never been isolated. Also, their therapeutic effects are limited. Their main functions are to promote growth and vitality and place the body in a condition of resistance to disease. Undernourishment may be caused by a diet of vitamin-deficient foods and is overcome by correcting the diet. Rickets, Beriberi, Scurvy, Xerophthalmia are "deficiency diseases" which are gradually being recognized and treated as such.

All four vitamins are equally essential to our well being. Large chemical concerns claim to manufacture patent preparations containing them all. An examination of some half-dozen of these preparations by E. V. McCollum, a leading chemist in John Hopkins University, discloses the fact that Vitamin B, the most stable of the three, is the only one of which he can find a trace. In his published article on the subject, we find quotations like the following—"does not contain more than traces"—"nearly free from"—"the preparation is worthless as a source."

McCollum employed these patent vitamins in the diet of certain of his laboratory animals selected for this special test. In every case they sickened and would have died if the patent vitamin had been continued.

It is only fair to add that there is one commercial preparation that does contain what it claims. Yeast cakes are a plentiful source of Vitamin B, but of Vitamin B only, and they have been overpraised. Why should we eat yeast cakes, for which we must cultivate a taste, when we can eat fruit and vegetables for which we have a taste already and which contain all three vitamins?

Far better from every standpoint to buy vitamins at the Green Market than the Drug Store!

Psychoanalysis, a Contribution to the New Psychology

By J. W. Bridges,
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PSYCHOANALYSIS is sometimes spoken of as the New Psychology. The latter term has, however, a broader meaning. A quarter of a century ago treatises were being written on the New Psychology. These dealt chiefly with methods and results of laboratory experiments. On the other hand the term New Psychology might be applied to a movement in psychology even more recent than psychoanalysis, namely, Behaviourism. According to this school psychology deals only with behaviour—with various kinds of responses to stimulations, and not at all with mind or consciousness.

The term New Psychology should properly be used to designate the modern views and methods of psychology as distinguished from the ancient and mediaeval. The old psychology was a science of the nature and destiny of the soul. It began with unverifiable assumptions regarding a soul or mind and by a process of deductive reasoning arrived at equally unverifiable conclusions. The system thus built up was pure speculation, and psychology was at that time quite rightly regarded as a branch of philosophy. This view of the science, although given up by present psychologists, is still widely prevalent among the laity, and results in the equally prevalent view that the subject is mysterious and impractical.

The New Psychology is over half a century old. The first laboratory for the study of psychology was founded at Leipzig in 1870. Henceforth psychology like the other natural sciences was to begin with observed facts, and from these its conclusions were to be arrived at inductively. This empirical method in psychology separated it from philosophy as an independent science and led directly to its practical application. This is the final goal and ultimate justification of all science. A science that can contribute nothing in the service of mankind has in the writer's opinion no right to exist. Applied psychology is of course, still in its infancy, but enough has already been done to justify its existence.

Psychoanalysis is merely one important contribution to the new psychology. It has in common with the whole modern standpoint an empirical starting point and a practical aim. The first contribution to this important phase of psychology was made by Sigmund Freud of Vienna in 1895. Freud had studied under Charcot, the great French neurologist, and had imbibed the French conception of psychology as the study of human nature especially as it manifests itself in behaviour; and his psychological views therefore fall into the same general category as those of Janet, Ribot and Wm. James. Freud arrived at his views as a result of his study of neurotic patients. He found that if the patient took his symptoms or his dreams as starting points, he could, through the process of free association, bring into consciousness more and more forgotten experiences from early childhood. Freud found that this course led inevitably to the revelation of childhood sexual material, and resulted finally in the removal of the patient's symptoms. This method he called psychoanalysis. Psychoanalysis is thus primarily empirical and practical. It is a form of psychotherapy; but it leads inductively to a psychological theory.

In this paper the writer will first sum up as briefly as possible, the contributions of Freud, Jung, and Adler; and then he will present his own views regarding psychoanalysis and what it has contributed to psychology. Freud divides the mind into three parts: the *conscious*, the *fore--conscious* and *unconscious*. The conscious is that portion of the mind of which we are immediately aware. The fore-conscious is outside immediate awareness but can be very readily brought into consciousness. The unconscious consists of those experiences and desires which cannot be brought into consciousness by any ordinary means. Psychoanalysis is the method by which the unconscious is made conscious, by which forgotten childhood experiences are brought again to memory.

The unconscious originates out of *mental conflict*. According to Freud this is primarily a conflict between the perverse sexual wishes of childhood and the conventional morality which the individual is obliged to acquire. As a result of this conflict the original sexual wishes are *repressed* and a resistance is built up to prevent them from re-entering consciousness. This defence is frequently greatly over-developed, so that in consciousness there appears the opposite of the repressed trend. It is the task of psychoanalysis to break down this resistance and reveal the original wishes.

The nature of the unconscious is according to Freud *dynamic.* It consists of repressed childhood wishes which are ever striving to express themselves. It is also, as intimated above, *sexual.* The energy that strives for expression is sexual energy. Freud calls it *libido.* The sexuality of the unconscious is, however, a perverse sexuality. It consists of sexual cravings of childhood which cannot be lived out in adult life in a civilized or conventionalized society. Among the most important of these are: autosexual cravings or self love, homosexual craving or love of other persons of the same sex, incestuous craving or love of persons of the opposite sex within the same family, sadistic and masochistic craving or love of sexual cruelty and pain, and exhibitionistic craving or love of sexual display.

These repressed impulses manifest themselves in various indirect ways, for they cannot be completely annihilated. They express themselves symbolically in dreams. Dreams are thus wishes that cannot be fulfilled in real life. They reveal themselves in mannerisms and slips of the tongue. They are converted or transferred into neurotic symptoms. It is the aim of psychoanalysis to remove the symptoms by laying bare the underlying cause and directing the repressed libido into other harmless channels. This re-direction of the libido into higher, that is socially more desirably channels, is called *sublimation.*

Carl Jung of Zurich studied psychoanalysis under Freud, but later departed from the master in the following way: Freud's conception of the libido or sexual energy, is broadened to mean the urge, push, or energy of life which is manifested in other activities as well as the sexual. This libido has two opposing trends: progression, the striving forward towards differentiation and the overcoming of intervening obstacles; and regression, a pull backwards toward the uniformity and irresponsibility of infantile and prenatal life. This regressive tendency is substituted for the incestuous love which Freud believed dominated the neurotic patient and enchained him to the past. *Mental conflict is fundamentally a conflict between these progressive and regressive trends.* A neurotic patient is one who instead of overcoming the obstacles in his path, has regressed to an infantile form of expression of the libido.

Alfred Adler of Vienna also studied under Freud, but later developed his own system of individual psychology. Adler puts the main emphasis on the ego instincts instead of the sex instinct. The dominating impulse in life is not the sex instinct, but the wish

for power and the wish for security. The desire for superiority is a compensation for a feeling of inferiority that is based upon an actual or supposed defect. Neurotic symptoms represent a protest against a constitutional inferiority or on inferior position in life. Thus, hysteria in women is frequently a protest against the supposed inferior position of women in general. Degeneracy, genius, and neurosis are, according to Adler, related in the following way: the degenerate succumbs to his inferiority—the compensation is unsuccessful. The genius completely compensate for his inferiority by remoulding himself or reality to suit his purpose. The neurotic compensates by a fantastic creation. He negates reality and seeks refuge in fantasy. He compensates in day dreams or in behaviour that does not adjust him properly to his environment. He attains power through sickness.

As far as the technique of psychoanalysis is concerned, Jung and Adler are in practical agreement with Freud; but, while Freud explores the unconscious in order to reveal repressed sexual desires, Jung seeks to recall earlier forms of libido activity and to detach the subject from the past, and Adler attempts to show his patient that his symptom is really an indirect and unsuccessful expression of the wish for power. Some English and American psychoanalysts have developed a method and a point of view that embrace the best results of these three masters.

In the writer's opinion the psychoanalyists have contributed a great deal to psychology; and he will endeavour to state as concisely as possible this contribution as he sees it. Three points must be emphasized in the beginning. In the first place psychoanalysis is by no means co-extensive with psychology. It is a part of psychology, and many psychologists still regard it as controversial or of only minor importance. Secondly, psychoanalysis has been given a philosophical and speculative turn by Jung and others. Jung's reasoning is interesting and almost seductive, but it lacks the empirical foundation that Freud so greatly emphasized. Thirdly, the psychoanalysts often express themselves in an antiquated terminology that savours of mysticism and leads to confusion. It is difficult to separate fact from theory or to change an established terminology, and no claim is made that the following exposition has completely attained either of these aims.

The fundamental contentions of psychoanalysis may, in the writer's opinion, be summed up in a single paragraph. Man is a product of inheritance and environment, of nature and nurture. The former often comes into conflict with the latter. The so-called

mental conflict is chiefly a conflict between original nature and cultural morality, but diverse original impulses may also come into conflict with one another. This conflict may persist; or the outcome may be (a) domination of original nature, or (b) domination of habit, that is to say repression or original nature, with various indirect manifestations, or (c) modification of original nature to suit the social demands. Each of these points will be considered in greater detail.

Man's original nature includes such things as his sensory and motor capacities, his intelligence and his instinctive equipment. Psychoanalysis is concerned only with certain instinctive elements of his original nature. In the first place man by original nature is perversely sexual. In other words he has in his instinctive equipment sexual cravings that are tabooed by the social order in which he lives. The writer accepts the Freudian analysis of these perverse sexual elements into autosexual craving, homo-sexual craving, incestuous craving, sadistic and masochistic craving, exhibitionistic cravings and so forth.

Secondly, by original nature man is selfish. This selfishness takes two forms: self aggrandisement and safety seeking, or the wish for power and the wish for security. Man desires to dominate as much of the world as possible, but he also desires the greatest possible comfort and security. Thirdly, man by original nature is pugnacious, and he expresses his pugnacity by the removal or destruction of the thing that stands in his way. Fourthly, men by original nature is gregarious, he must consort with others of his own class. He fears social disapproval or ostracism and is willing to sacrifice other cravings to attain his social desires.

Man is also a product of his environment. He is born into a world in which he is obliged to acquire certain habits. Some of these habits are picked up casually, others as a result of formal training. Of chief importance for our purposes are his so-called moral habits, his cultural morality. He finds that his sexual life must be rigidly restricted, his egoism must be modified, his pugnacity must be curbed. Moreover, he wishes to subscribe to these social demands because he is a gregarious animal. The herd instinct and the fear of punishment and disapproval supply the motives for the acquisition of his moral habits.

To be continued

Early Public Health in Toronto

The following is a brief summary of the early activities of the Department of Public Health, of Toronto, as outlined by Mr. Robert Wilson, Chief of the Division of Sanitation, at a banquet tendered him on the occasion of his retiring from the Division, to become Chief Prosecuting Counsel for the Department, in connection with the Police Court:

The date of the appointment of the original Board of Health in Toronto seems to be lost in antiquity, but I find in the Minutes of Council for the year 1863 that on the 14th day of January the Board of Health presented their final report for the year 1862. This report recites the fact that "the appropriation for the year was $300.00 which would have been sufficient for their purpose, but a deficit of $136.14, carried over from the previous year (1861), had to be met." They "erected a Pound in the western part of the city at a cost of $70.00," and recommended that "another Pound be established in the vicinity of St. Lawrence Market." "The attention and efforts of the Board during the year had been directed chiefly to the nuisances existing in the city, created by the overcrowding of piggeries and cow stables, and again recommend that the Board of Health be discontinued and the duties performed by the police force."

So we see by this report that a Board of Health had been in existence in 1861, and how many years before that I cannot say, but I have been unable to find under what authority it acted or was brought into being, as the Provincial Health Act was not enacted until many years later. In the year 1866 a Statute of Upper Canada was passed giving municipalities authority to "pass by-laws to prevent and abate public nuisances; to have vacant lots cleaned; to prevent or regulate the construction of privy pits, and for providing for the health of the municipality and against the spreading of contagious diseases." As a Board of Health had been operating in 1861 it is quite clear that they were not working under this authority.

Apparently the recommendation to abolish the Board was not agreed to, for I find in Report No. 2 submitted to Council on the 26th April, 1869, a recommendation that "the Board of Health be forthwith abolished, and that the Board of Works be requested to attend to the cleaning of the streets and lanes of the city and

the removal of all dead animals, refuse matter, etc.", and that "Mr. Reed, the present Health Inspector, be transferred to the Board of Works." This recommendation was agreed to on the same day and on the 26th November By-law No. 502, entitled, "A By-law relative to the Public Health of the City of Toronto" was passed. This by-law repealed several former Health By-laws, the earliest of which had been passed in 1858, and it apparently provided for the consolidation of some by-laws which had been passed previous to that date.

This By-law No. 502 contained fifty-five sections, and is a remarkable piece of legislation to those who consider that the City Fathers of that day were ignorant of the laws of sanitation, for many of these sections are practically identical with several of the sections contained in the Provincial Health Act and the Model By-law attached to the Act to-day. Annexed to the By-law was a form for the use of the Inspector on which to make a report of each inspection, and at the foot of which was printed the following declaration: "I hereby certify and declare that I have examined the premises above mentioned, in accordance with By-law No. 502, and that the state thereof is as I have described.

"(Signed), ... Inspector."

Truly our forefathers did their work well.

The next reference to a Board of Health appears to be in the Council minutes of the 5th February, 1872, when Alderman Manning moved "that a by-law to re-appoint a Committee of Council to be called the Board of Health, be introduced;" This motion carried and By-law 542 was enacted at the same meeting; this repealed Section 2 of By-law 502, which conferred the authority of enforcement on the Board of Works, and invested the authority in the Board of Health, the members of which were delegated to act as "Health Officers." So far as I have been able to ascertain this committee was re-appointed yearly until the enactment of legislation in 1882 which brought into being the Provincial Health Act and the Provincial Board of Health.

In accordance with the requirements of the Act of 1882 the City Council took into consideration the appointment of a medical practitioner as Health Officer. Applications were received from many of the prominent physicians of the city and on the 12th March, 1883, Dr. William Canniff was appointed Medical Health Officer at a salary of $1,500 per year. That his duties were many and varied may be guessed from a perusal of By-law 1317, which provided he should:

1. Examine applicants for admission to Hospitals.
2. Consult with and advise the Markets and Health Committee respecting all matters relating to the public health and sanitary condition of the city and visit any person, place or premises for the purpose of examining same, when instructed by the Mayor so to do.
3. Upon being informed that any family is destitute and suffering from disease, at once proceed to visit such family and take such measures for their immediate relief as may seem requisite;
4. Advise the General Inspector of Licenses respecting unwholesome or adulterated articles of food.
5. Attend at least once a month at a stated place in each ward and perform the duties of Public vaccinator.
6. Discharge the duties of physician and surgeon to any City official or employee injured in the discharge of his duties.
7. Discharge all such other duties pertaining to the public health of the city and the sanitary condition thereof; and generally give due and proper attention to all the usual business appertaining to the Health Department of the city, and
8. Attend at his office in the City Hall from 10 to 12 a.m. and 3 to 4 p.m. daily except Saturday, and on Saturday from 10 to 12 noon.

As the population of the city at this time (1883) was over 99,000, his position does not seem to have been a sinecure, and apparently he had no assistance until the month of August, when a few policemen were temporarily transferred for sanitary duties; these were engaged for four months in making a survey of the city, and the results which were embodied in a report submitted by Dr. Canniff on the 28th January, 1884, addressed to "Mr. Ald. Carlyle, Chairman Markets & Health Committee."

This report is worthy of a careful study as it gives a fairly clear idea of the conditions existing in the city at that time, and the need of a competent official to deal with the situation. An analysis of the report shows that of some 16.500 premises inspected only 10,207 were drained (and many of these were suspected of being merely a box drain discharging into a privy pit), 4,396 had no drainage and 1,421 had defective drainage; 5,014 cisterns and 4,330 wells furnished the only water supply for probably twice that number of dwellings; 512 had no water supply; 2,994 were somewhat modern, as they were furnished with water closets, while 14,143 privy pits were found.

Permit me to quote from the report:—

"It will be observed that the report shows a large number of premises without drainage and no inconsiderable number with defective drainage. I have reason to believe that these numbers do not fully show the extent to which the want of proper drainage imperils the citizens.

"The importance of having adequate drainage leads me to respectfully urge upon your Committee the necessity of taking early steps to secure a full and free outlet from every district and yard in the city. . . . . Until sewers are constructed on all streets or lanes, so that private drains may be conveniently connected to them, there will remain portions of the city without this requisite for the sanitary welfare of the people.

"The subject of water supply for domestic purposes is also of great importance from a sanitary point of view, and while the number of services for supply of city water is rapidly increasing, there are a good many who have only well or cistern water for family use. Five hundred cases were found in which neither city, well nor cistern water is available, but there are a much larger number where the inmates of dwellings have only cistern water which is unfit for consumption. The reports also show a large number of wells situated in more or less proximity to privies, where neither the wells or the privies are enclosed with water-tight walls."

"The returns show that there are now in use in the city a very large number of privies. The character of these is by no means uniform, and it was found impossible to classify them, except as to whether full or foul. While some of them are constructed in a more satisfactory manner, many of them are little better than pits in the earth. Too many are shallow and often overflowing into the yard or street."

"In some cases families were found with no such necessary convenience as a privy, and the street became the receptacle of the excrement with the slops and the garbage. Without considering the general question as to the best mode of disposal of excreta and sewage generally, it may be remarked that the use of privy vaults is now condemned by all sanitarians for use in a thickly populated district. Although it is far from a pleasant contemplation that the sewage of a population of nearly 100,000 should be poured into the bay to gradually convert it into a cesspool, still of the evils it is preferable to have water closets, by which the excrement may be carried at once away, instead of collected on premises to become

a source of imminent danger to public health—it is to be hoped that the scheme for carrying the sewage of the city away by intercepting trunks sewers will very shortly become an accomplished fact."

In another report attention is called to the filthy and unsightly condition of the water front between Spadina and Berkeley Streets, and those who remember the disgusting conditions at the foot of Yonge and other streets where the sewers discharged into the bay, realize the great improvement that has taken place by the construction of the trunk sewer, which carries all the city's sewage to the plant in the eastern part of the city. In this report it is also stated that garbage and street sweepings are still being dumped in the bay at the foot of Berkeley Street and an appeal is made to at once consider the advisability of adopting some other method of disposing of the city's waste.

What a contrast to the conditions existing to-day in the metropolitan City of Toronto with a population of over 530,000; not a dwelling without a continuous supply of pure city water; practically every dwelling house drained; privy pits all abolished (except in parts of recently annexed suburbs) the trunk sewer an accomplished fact and incinerators erected for the destruction of garbage and the city's waste. But this is not all, the activities of the Department have been increased from time to time, until now they embrace practically every interest and influence that has a bearing on the health and welfare of our citizens and the future generation.

Judged in the light of the knowledge of to-day, our work in the early days may be considered crude, but in the pioneer work done in those days the foundations were laid well and deep on which has been erected that wonderful structure that is acknowledged by eminent authorities to be the most perfectly organized, the best equipped and the most efficient department of health on this continent; and I am glad of the opportunity of paying this tribute to the pioneer work done by the late Dr. William Canniff, the first Health Officer of Toronto.

"Modern Aspects of Physical Education"*

By Miss G. Barber.

FROM the previous paper we have had an opportunity to review the history and methods of body training among Ancient Peoples, the Greeks being the first to establish and maintain a system of Physical Education based on high ideals. In the gulf between Greek and Modern Physical Education the work of the pioneers of Germany and Sweden has had a lasting effect. Developed by patriotic leaders who applied to their work little psychology of child study, these systems were the result of political situations in Europe. As such they served a purpose in awakening a national consciousness to the fact that the youth of the nation should be physically, intellectually, and morally strong. Modern educators claim that these two systems planned for adult youths were an adult-conceived, formal means of developing muscular power, strength and endurance. Unfortunately the general public thinks of Physical Education as dealing with gymnastics alone.

From the educators the complaint comes that the teachers of Physical Education are unable to define their objectives in terms of General Education. These objectives have varied since the school developed to teach written language, and all vital education took place outside of the school. At present we are demanding that, along with the other activities now cared for by the school, the physical activities once a part of home and community life be organized. As a consequence the aims of Education are being revised to include new values inherrent in Physical Education. We believe that Citizenship, Habits, Training for Life, and Latent Possibilities are developed through a wise, wholesome programme of Physical Education.

Most systems set forth the following aims:

1. Corrective—to overcome bad posture.
2. Educational—to train alertness, precision, control, and coordination.
3. Hygienic—to stimulate the activity of various systems.
4. Recreative—to give pleasure and fun.

*Read before the Toronto Society of Physical Education, January, 1923.

The questions asked are:

1. What characteristics must an exercise have to produce the above results?

2. What type of activity is best suited to satisfy the above demands?

According to the best authorities an exercise to have *Corrective* value must be repeated frequently; be sustained and slow rather than abrupt; be sufficiently powerful to (a) restore to normal; (b) maintain at normal; (c) approach the normal; awaken an interest; or be an exact prescription for a definitely diagnosed deformity. It is readily granted that three-fourths of the problem in treating bad posture is to awaken the desire for good posture. For that reason the most effective work may be done individually or with a small number of persons. For the correction of specific defects personal attention becomes a necessity; it is best to classify the pupils according to their needs and plan their work (corrective) accordingly. The average teacher of physical education no longer expects to establish habits of good posture through his formal gymnastic lesson alone, if he meets his pupils only once a week. While it is not difficult to maintain the proper carriage throughout a gymnastic lesson, the problem is to awaken an interest which will make the pupil practice good posture outside of class. Tests similar to the Bancroft Posture Test or the more recent posture drills, contests and campaigns are a means of stimulating interest and checking up posture outside of the classroom.

The *Educational* Value of an activity depends on the definition of Education—whether it is training for life, efficient citizenship, or an opportunity for the child to unfold and develop under more favorable circumstances or conditions. An exercise to have an Educational value must then—

1. Have an Aim.
2. Be interesting and have a meaning.
3. Be expressive of an idea, thought or feeling.
4. Function in the life of the individual
   (a) As a practical motor procedure making him more efficient.
   (b) As an acquisition, making him happy or capable of giving pleasure to others.
   (c) As training in social or moral qualities of good citizenship.

The activities best suited to the above characteristics are:

1. Games, Sports, and Athletics.

2. Dancing—folk, characteristic, and national.
3. Exercises on the apparatus.
4. Formal Gymnastics.

Physical Education aims to make the *play life* of the child efficient, and through the above activities help development along mental, moral, and organic physical lines which are necessary for adult adjustment. We find the grade teacher and the physical director studying the physical and social characteristics of the children and then selecting for teaching those activities that will secure the worth-while ends, formal gymnastics having no place before the end of the third grade. The *spontaneous play* of children, involving big muscle activity, determined by instinct tendencies, will meet all of these tests.

Athletics, sports and dancing may be of distinct value in character training, in developing ideals, and in forming correct social relationships. "In these activities *Moral* development is inherrent because of the instinct tendencies exercised and the social relationships involved."—Clark Hetherington. Whether the development tends to good or bad depends upon the leadership.

In order that these values may be more fully or universally applied we notice certain tendencies serving to tie up motor power function in a protective and recreational manner, namely:—

1. Games and athletics available for all members of a high school or college instead of for 50 out of 500 or 200 out of 2,000.
2. The granting of an A.B. or B.S. degree only after the student has passed certain swimming requirements. (Of 73,000 accidental deaths in the United States last year 7,000 of these were drowning accidents.)
3. The encouragement of Intra-mural instead of Extra-mural sports.
4. Women's athletics and games governed by rules for women.
5. Standardization of various Physical Efficiency tests for Boy Scouts, Girl Guides, Y.W.C.A., Y.M.C.A., H.S. Athletic Leagues. (Tests that encourage all-round development.)
6. More extensive use of corridors, play space, school gymnasiums, etc., outside of school hours.
7. Recent legislation in favour of Physical Education instead of Military Training for H.S. boys.

It is conceivable that training from plays, games, and sports might be adequate under ideal conditions. However, since our school life represents a large proportion of time spent in sedentary work, the definite localized development accomplished by formal

gymnastic work is very effective. In spite of the popular and in some cases just criticism of formal gymnastics, it is possible to bring to this field a spirit of enthusiasm for group action and competition. There is a satisfaction from vigorous muscular action if there is the knowledge that it will result in immediate and permanent benefit.

The *Hygienic* aim means production of Health; to qualify in this respect an exercise must produce wholesome activity of the circulatory, respiratory, muscular, excretory, and nervous systems. Exercises to satisfy the above aims are:—

1. Games, sports and athletics.
2. Dancing.
3. Gymnastics—drill or technique with a definite end in view.

If the above results are gained by pleasurable, self-initiated activities the reaction through the nervous system is much more beneficial. No exercise is wholesome unless it is suited to the individual needs and capabilities. This might lead us to a discussion of the adaptation of exercise to suit age-sex-and previous experience. It is very easy to be carried away by the group idea and forget the individual. Those of us who are actually engaged with teaching in this field look forward to the time when the opportunities for developing a programme better suited to the special needs of the individual will be possible. The word Hygienic suggests *Health Education Programmes* which are being carried out for the teaching of Health Habits. Health *Control* belong to the administrative department of the school, and the medical examiners.

To satisfy the *Recreative* aim an activity must contain the following characteristics:—

1. Interest.
2. Adaptability (gentle or vigorous as the needs of the hour demand).
3. Objectivity (the individual should forget self).

Activities such as the following should be completely satisfying:

1. Games.
2. Athletic Sports.
3. Apparatus for men and some girls.
4. Camp activities.
5. Mass Athletics.

The formal systems of Physical Education always planned for a brief recreation period of games or dances at the end of the gymnastic lesson. The recreational value of gymnastics depends mainly upon the personality, zeal and enthusiasm of the teacher; consider-

ing the large number of enthusiasts who attend the optional classes in Y.M.C.A., Y.W.C.A., and also municipal gymnasia, the directors of these classes may feel that the work outlined there is considered recreation. Having failed utterly in giving the individual the correct play laboratory from birth to maturity, we should aim to bring all the recreation possible into our programmes.

Interest in recreational activities closely allied with Physical Education is evidenced by:—

1. Demand and growth of Playgrounds.
2. Broadening of programme of Normal Instruction in Schools of Physical Education to meet these needs.
3. Value placed upon gymnastics, games and dances by large industrial organizations.
4. Camp movements.
5. Work of Dr. Gulick, Joseph Lee, Henry Curtis and others in the interest of play.

The use of Games and Mass Athletics by the training camps during the war.

Back of *Modern Physical Education* we feel to-day the *Patriotism* of Ling and Jahn; the *Psychology* of Hall, Dewey and others; the *Idealism* of such men as Gulick and the *Service and Devotion* of such men as Sargent, Leonard and Hitchcock.

Typhoid Fever at Cochrane

By Dr. J. W. S. McCullough, Chief Health Officer for Ontario.

THE typhoid fever epidemic at Cochrane, from the information in our possession, would appear to be directly caused by pollution of the Town's water supply. The recognized source of supply for the Town is from springs. Unfortunately the springs do not yield enough water for the Town's requirements, and are quite inadequate to take care of any unusual demand such as a fire. In order to provide for such a contingency the pumps are also connected to Spring Lake, which is an overflow from the springs, but which in addition has a small catchment area of its own. At ordinary times the water level in Spring Lake is several feet higher than the adjacent chain of lakes, which receive the sewerage from the town, but which have a common outlet with that of Spring Lake. Spring Lake and one of these lakes receiving sewerage is connected by a marshy area, through which was cut some years ago a channel to provide an overflow for Spring Lake into the other.

During the dry season last fall, and during last winter the springs proved inadequate to meet the demands of the town, and a considerable amount of water was taken from Spring Lake, with the result that the level of this lake was lowered appreciably, and at the time of the outbreak it was found to be three feet lower than the adjoining lake. At this time it was found that the connection between the two lakes had reversed the direction of flow, and that sewage was actually entering Spring Lake from what had served in former times as an outlet to this lake, the level of Spring Lake apparently having during the season altered by nearly six feet, and instead of being three feet higher than the adjoining lakes was now lower.

During the summer seasons of 1921 and 1922 the Board had several officers in Cochrane on one purpose and another, and the question of the inadequacy of the present spring supply was urged upon the town. As a result of the Board's warning the town gave its first reading to a by-law on August 1st of last year, providing for an improvement of the spring supply, and for sewage disposal. Unfortunately, the town did not pursue the matter, and the season passed without anything further being accomplished. The Board

recited in its report of November 25th, 1921, the need of a reservoir to store a supply of spring water, and the need of chlorination equipment in connection with the pumping works, so that the supply from Spring Lake could at all times be treated. On March 3rd, 1922, the Board forwarded a copy of its report of November 25th, and urged the immediate purchase and installation of a chlorination equipment.

The Provincial Sanitary Engineer was in Cochrane on Sunday, March 11th, 1923, some days before the outbreak was known to exist. At that time there were some reported cases of diarrhoea arising in Cochrane, although it was difficult to determine from the diagnosis whether this was the diarrhoea of typhoid, or some manifestation of the "flu" epidemic, which was also present at that time. In order to make doubly sure of the water supply the Provincial Sanitary Engineer called a meeting of the Council on Sunday afternoon, and told them that in view of the situation it would be imperative for the town immediately to install a chlorination device, and after the meeting the Provincial Sanitary Engineer wired one of the Board's engineers to borrow an equipment from the Wallace & Tiernan Company, and to bring it up on Tuesday, and install it as soon as possible. The Tuesday train did not arrive until late Wednesday evening, and it was not till about Thursday noon that the machine was installed. It has been operating from that date, and it was not until a few days later that the town recognized that they were suffering from an outbreak of typhoid fever.

If the Pumping Engineer had been fully aware of the situation he might have scented some danger when he saw the level of Spring Lake dropping in his pump-well. The blanket of ice and snow over the whole area, however, concealed what was taking place.

In addition to the equipment by our Engineer, another machine was dispatched last week to take care of the treatment of an auxiliary supply, which the town was proposing to obtain from Norman Lake. I understand, however, that the lowering of the level of Norman Lake within the last few days has necessitated the abandonment of this supply.

The Board, through a request to a local engineer in the municipality for information re. direction of flow in outlet connection of Spring Lake, was the first body to point out the manner in which the supply had become contaminated.

Up till midnight of the 3rd of April there have been 600 cases of typhoid fever with 12 deaths.

The Board has sent to Cochrane on the Mayor's request two physicians, 46 general nurses, and 10 of our own public health nurses. The latter are carrying on scout and preventative measures among the people, general nursing in emergencies, looking after young children where mothers are ill, and making themselves generally useful. We had four of these nurses in Cochrane for the first ten days and, upon the Mayor's request, and statement that they were doing most valuable work, six more have been sent forward. Miss Knox, Associate Director of the Division, has been on the ground most of the time, and the District Officer for North Bay has been there almost continuously.

There is a well equipped emergency hospital of 72 beds on the three floors of Columbus Hall, and a convalescent home has been established next door.

The work in Cochrane is in the hands of a very competent local committee, who, I am advised, are doing excellent service. I am in touch with the Mayor by telephone almost every day, and he has been told to advise me of anything he needs. He has expressed his appreciation of the work we have done.

The Red Cross has offered assistance, and this information has been conveyed to the Mayor, who is to advise me if they need anything the Society can afford.

The fact that a polluted water supply has been shown to be the cause of this severe outbreak of typhoid fever, and that the Council had neglected repeated warnings of the Board in this respect, places a very grave responsibility upon the local corporation.

Social Background

Mental Defect as a Factor in Family Instability

MISS GORDON HAMILTON, *of the Charity Organization Society.*

THE question of mind is of natural interest to everyone. Most people know something about mental tests and most people know what feeble-mindedness means. The conception of "mind lack" is not a difficult obscure picture to the average person. But where people are still densely ignorant is with regard to the social significance of feeble-mindedness. If one asks what a feeble-minded person is anyone will say—"Why he's stupid"—or more colloquially—"He hasn't anything in his bean"—but if one asks what does a feeble-minded person do the answer is less ready.

Your Commissioner at Toronto in 1919 in his report on the Care and Control of the Mentally Defective and Feeble-minded in Ontario, said truly—"There remains an almost complete ignorance on the part of the public generally of the fact that feeble-mindedness in all its aspects is the greatest hindrance to progress and efficiency in the educational and industrial world." And back in August, 1908, the British Royal Commission on the Care and Control of the Feeble-minded put its finger unerringly on the important part of a definition when they stated that the feeble-minded were "persons who may be capable of earning a living under favourable circumstances, but are incapable from mental defect existing from birth or from an early age, of (a) competing on equal terms with their normal fellows, (b) of managing themselves or their affairs with ordinary prudence."

The test of feeble-mindedness then is not a mere "I.Q." (intelligence quotient) as the Educational Psychologists have it, but a social capacity test—an evaluation of the individual's ability to live successfully. This inability of the feeble-minded to manage their affairs with ordinary prudence, this inability to compete on equal terms with their fellows—is this a label of some clinic about mental defect, or is it a fact which is proved in schools and city streets and

*An address delivered before the Social Caseworth Conference held recently in Toronto under the auspices of the Neighborhood Workers' Association.

It has not been thought necessary to reproduce the graphs referred to in this article.

ordinary homes and jobs and other life relations? It is easy to make blanket statements; it is easy to create impressions for oneself and others—but is it true that the feeble-minded are more of a social problem than a "normal" family. So-called "normal" families get into plenty of difficulties. "Not all the monsters"—as the French saying goes—"live in Africa."

In New York City last year the family social workers in the Charity Organization Society asked itself these questions—Are we justifiably gloomy about our work with mental defectives? Is it really harder to do constructive work with the feeble-minded than with other groups?—Is it true that the feeble-minded are socially a burden heavier to carry than an average group of widows with dependent children who may need assistance? Do they take more time and effort, and why? Are we suffering from a habit of mind and can anything be done about it?. So the Society set out to study the problem, attacking it as a case-working agency should do—case by case. A research committee was formed in February of last year. This Committee was composed of two doctors, a psychiatric social worker, a district secretary, the district Superintendent of the society, a representative from the court field, and the writer. About 400 case histories were read and a field study made, tracing out a considerable number of social adjustments. The report was placed in the hands of the Committee in February, 1923.

Now, what were some of the findings of this report? It was found true in the first place that the feeble-minded were a specially deteriorated and incompetent lot—viewed not from the laboratory angle, not because of failure to pass some intelligence test, but because they were handicapped in perfectly definite ways in addition to the intellectual handicap. It was true, too, that they required an unusual amount of time and energy but this was due not entirely to the nature of the problem but to the way workers went at it.

The following graph will illustrate something of the nature of the problem. Comparing the pathology and social maladjustment incident to our average case-load and the pathology incident to the feeble-minded group in a given year, we find that the feeble-minded show two or three times as much mental disease (insanity, etc.), cardiac conditions, tuberculosis, venereal disease, immorality, prison sentences, etc.. as the average. We note here, however, one interesting exception. The problem of desertion by and large was less in the feeble-minded group than in our average case-load. This would seem to indicate that the feeble-minded have not enough

initiative to get up and run away—an indication that is probably characteristic. However, such a graph makes us readily understand why the presence of mental defect makes a family situation unusually difficult. Mental defect enters the arena allied with its kinsmen and co-workers, disease and delinquency and crime.

The second graph shows the mental defective as he meets the competition of his fellow men and how he, as we regretably say in the States, "gets away with it."

To find this out a careful field study of 117 defective individuals was made last summer. The cases were entirely unselected, except that a diagnosis of mental defect had been obtained prior to 1916 when the cases had been under the care of the C.O.S. The problem was to see how far this unselected group had succeeded in adjusting itself to the community. Although, as everyone who has done this sort of work knows, it is difficult to get reliable data, the results here were carefully checked and re-checked in a number of ways beside the personal visit, and the social data was made as accurate as possible. The results showed that 48 per cent. over a period of not less than five years and averaging eight years since the diagnosis was made, proved to be dependent or anti-social types—of which thirty-one persons were in institutions, fourteen were definitely promiscuous, etc. The fairly social types who were stabilized in industry or in marriage—though we cannot here consider the eugenic aspects of such marriages—were only 17 per cent.—19 per cent. were either still in school or were shown to be marginal workers in industry, the drifting, shiftless relatively undependable workmen earning low wages.

It is but fair to say that these figures may not be typical of mental defectives more fortunate in environment than those generally known to the family agency, nor is New York City typical of the State and still again, prior to 1916 the worst and more obvious —i.e.—lower grade defectives—were the ones apt to be diagnosed. But still the facts show that this group of unselected defectives is anything but an asset to the community, and the facts have to be reckoned with as the situation, even in New York, doesn't change over night!

Then shall we say—these graphs prove the contention that the feeble-minded are hopeless for a family agency to deal with, that no one can do constructive work against such odds! Well, it is not the part of wisdom or courage to minimize difficulties, but the graphs do not tell the story entirely. Fortunately it is pretty well

established by now that early diagnosis and training can turn many of our mental defectives into useful citizens instead of the jobless, the waster, the prostitute which we have to-day. It is possible with ungraded classes, with manual and trade training, with clinics, with the intensive supervision of unlimited patience, to assure even to our handicapped defectives fairly satisfactory niches in the community. There will always be a class needing permanent segregation and for these, institutions and colonies must be built, but there is such a person as the docile, trained and relatively competent defective—and the crux of the matter lies in training and supervision. The 1916 group were, by and large, an untrained group—and there is no court of justice where the punishment of delinquency fits the crime of our neglect more exactly than in this matter of the feeble-minded. It is society's stupidity, not the stupidity of the feeble-minded that is responsible for this harvest of misery and failure.

Resources were lacking in 1916. Knowledge itself was lacking. Resources, unfortunately, in New York are still lacking for adequate treatment of this problem, but knowledge is spreading and knowledge is half the battle. A community can pay for special institutions and colonies or it can pay for prisons and reformatories;—it can pay for good housing and supervision or it can pay for syphilis and prostitution;—it can pay for ungraded classes and trade training or it can support the families of the feeble-minded who can't keep a pob. The collective choice is the community's. But it is not enough to make a wise collective choice and so plan the budgets.

The agency which finds the problem of the mental defective hopeless and its own outlook gloomy has a legitimate grievance in those communities where resourses of institution and clinic, psychopathic hospital, ungraded classes and so on, are lacking. But let us suppose for a moment a community with ideal resources,—the agency would still be gloomy unless it had taught itself first to differentiate and discriminate one type of defective in one kind of environment from another type of defective in another type of environment, and so use those ideal resources wisely and well. In other words, the agency would have to apply the best sort of case work principles to the sub-normal. Feeble-mindedness is not a diagnosis, it is only a large general classification within which anything is rather more than likely to happen. Some things happen again and again, but the more one knows the less one is likely to predicate largely in this as in any other field. The only point we are certain of is that mental defectives are limited personalities

and part of the gloom of case workers has come because they have insisted on applying the same standards to feeble-minded persons as to others better equipped. No therapy, medical or social, will make the feeble-minded normal and we should gear our expectation to a more limited performance. No wonder the atmosphere of gloom prevails so long as workers expect the impossible! With careful training and a good home many defectives will adjust satisfactorily to industry and home-life. They may support themselves; they may even make excellent wages; they need not get into special difficulties, but they can never be turned loose as a sort of finished product on their own, any more than a child can be turned loose. Case workers are learning to keep their heads and their tempers, to distinguish the socially improvable type from the kind that needs must have custodial care and are patiently helping to organize resources for the protection of the community type defective.

There is no panacea for the feeble-minded. These are the children of whom all good citizens are voluntary or involuntary guardians. They will become what we let them become. And, by ignorance and indifference, by political manoeuvering inadequate appropriations, by shilly-shallying of one sort or another, by short-sightedness and down-right stupidity, we are letting whole generations of these children, year after year, be sacrificed to social conditions as unnecessary as they are iniquitous.

The social worker is facing to-day the problem as it is, not belittling its difficulty, but finding strength and courage in analysis and perspective. Mental defect is not all black—it is not all anything. Just as under the spectroscope colours invisible to the naked eye emerge, so discriminating methods applied to the feeble-minded show the adjustments that are possible to science and case work.

DOMINION DEPARTMENT OF HEALTH, OTTAWA.

VENEREAL DISEASE REPORT FOR 1921-1922.

	—1921—		—1922—	
	New cases admitted to clinics and institutions.	Reported by physicians	New cases admitted to clinics & institutions.	Reported by physicians.
January	1,095	1,369	1,302	1,267
February	974	1,204	955	1,068
March	713	1,349	1,021	1,493
April	683	1,221	869	1,421
May	683	1,520	997	1,481
June	914	1,129	1,032	1,141
July	799	1,041	1,005	1,186
August	814	1,184	941	1,679
September	724	1,241	959	1,237
October	839	1,315	1,257	1,573
November	975	1,293	913	1,489
December	1,054	1,323	1,001	1,185
Totals	10,267	15,189	12,252	16,220

Total new cases for 1921, 25,456. Total new cases for 1922, 28,472.

NEW CASES ADMITTED TO CLINICS FOR THE YEARS 1921-1922.

	—1921—				—1922—			
	Syphilis.	Gonorrhoea.	Chancroid.	Tl.	Syphilis.	Gonorrhoea.	Chancroid.	Tl.
January	513	564	18	1,095	535	737	30	1,302
February	500	467	7	974	447	485	23	955
March	333	367	13	713	450	531	40	1,021
April	318	353	12	683	406	450	13	869
May	357	315	11	683	447	523	27	997
June	492	402	20	914	358	648	26	1,032
July	366	408	25	799	605	369	31	1,005
August	398	388	28	814	342	574	25	941
September	381	327	16	724	390	539	30	959
October	398	420	21	839	465	757	36	1,257
November	446	483	46	975	328	576	9	913
December	451	576	27	1,054	398	491	112	1,001
Total	4,953	5,070	244	10,267	5,171	6,680	401	12,252

TOTALS FOR THE YEAR 1922.

	No. of patients under treatment.	No. of treatments.	No. of Wassermanns.	No. of injections of Arsphenamine.	No. of laborat. examinations.
January	10,962	21,577	2,448	4,164	7,684
February	10,324	20,595	1,707	3,164	5,916
March	11,737	28,009	1,826	3,684	6,345
April	10,632	14,704	1,899	3,380	6,200
May	12,180	23,115	2,151	3,529	6,690
June	11,726	20,711	1,905	3,196	6,293
July	9,828	20,243	1,488	3,442	5,937
August	12,064	20,862	1,768	3,641	6,480
September	10,650	20,181	1,878	3,087	6,233
October	11,575	19,702	2,036	3,666	6,942
November	10,531	19,598	1,892	3,499	6,572
December	11,059	24,136	1,626	3,499	6,287
Total		280,433	22,624	41,951	77,579

News Notes

Dr. H. F. Vaughan, Commissioner of Health, Detroit, will speak on "Some Recent Aspects of Public Health Administration," at the Ontario Health Officers' Annual Meeting in the Physics Building, University of Toronto, May 21st to 23rd.

An interesting feature of the Ontario Health Officers' Convention on May 21st, 22nd and 23rd will be an address on "Insulin in the treatment of Diabetes," by Dr. F. C. Banting, of the University of Toronto.

The Hon. Mr. Justice Riddell will be the speaker at the luncheon of the Ontario Health Officers' Association at Hart House on Monday, May 21st, at 1 p.m.

The latest reports about the typhoid epidemic in Cochrane give the number of cases to date as 804, and the number of deaths as 50. There were 518 cases reported in March with 11 deaths.

Psychiatric social workers throughout the country have organized as a section of the American Association of Hospital Social Workers, to be called the Section on Psychiatric Social Work. This action, discussed and planned at the time of the National Conference of Social Work in Milwaukee, 1921, was put into effect during the 1922 Conference at Providence, when the American Association of Hospital Social Workers at its annual meeting formally adopted the Section. The active membership of this Association includes any one who has been employed for a year in social work in a hospital or dispensary. As many psychiatric social workers are employed in clinics not connected with hospitals and dispensaries, or in mental hygiene societies, provision is made for admitting associate members of the Association to active membership in the Section, when they meet the Section's membership requirements.

The requirements for active membership in the Section are based upon training and experience; and there are no associate members. Graduates of recognized training courses in phychiatric social work of not less than nine months' duration, are eligible after they have held a position in psychiatric social work for one

year; graduates of schools of social work who have not taken a special course are eligible after two years in a position in psychiatric social work; and persons who have not taken formal training but meet certain educational requirements are eligible after four years of successful accomplishment in psychiatric social work.

The objects of the Section are stated as (1) to promote association among psychiatric social workers, and (2) to maintain standards in psychiatric social work. Various local groups that meet more or less informally are co-operating with the Section. No local branches of the Section, however, are being formed at present, as the emphasis is now upon uniting all eligible psychiatric social workers of the United States and Canada in one organization. News of the progress of the new Section will appear in the Association's Bulletin; and meetings will be held when the Association holds its annual meeting during the Conference of Social Work in Washington, May 16-23.

The term "psychiatric social worker" was first used about 1918 to indicate a social worker working in association with a psychiatrist in the study and care of persons who present psychiatric problems. Such problems may appear as mental disease, delinquency, anti-social behaviour, or bad habits, and in so far as all social workers meet these problems, some knowledge of psychiatry is essential to all social case work. But there arose a need for a specially trained social worker, with a dominant interest in mental processes and mental hygiene, to work with the psychiatrist. In 1918, there were perhaps fifty social workers in the United States engaged in this field, who had received their preparation in various ways. During this year two special courses of training for psychiatric social work were started by the Smith College School of Social Work and the New York School of Social Work. Previously the only systematic training offered for this special field had been an apprentice course given by the social service of the Boston Psychophatic Hospital. Since 1918, a number of courses have been offered in various places, and others are under discussion. The demand for social workers in this field has been so great that many who were trained for other branches of social work have been drawn into it, sometimes with a short preliminary course of study or a short period of apprentice training, and sometimes without even this slight preparation. In many places, particularly in connection with work for the ex-service men, it has been necessary to use the services of persons who have some knowledge of mental disorders, but have had no training in social work. Because of this variety

in personnel, there is considerable variation in the standards for psychiatric social work held by different persons, but in the main the standards set by the two schools of social work that first introduced this special training are being upheld and advanced. These schools require for admission previous education of college rank and give a course of approximately two years, including practice in social case work for at least nine months. A curriculum for a course in psychiatric social work is recommended in the report of the Committee on Training for Hospital Social Work of the American Hospital Association, which worked during the year 1921-1922 under the chairmanship of Michael M. Davis, Jr., upon an investigation of the subject of training for medical work and psychiatric social work.

The officers of the new Section on Psychiatric Social Work of the American Association of Hospital Social Workers are as follows:

Mary C. Jarrett, President, Boston.

Mary R. Ferguson, Vice-President, Philadelphia.

Maida H. Solomon, Secretary-Treasurer, Boston.

Other members of the Executive Committee—Marie L. Donohoe, Boston; Cornelia Hopkins, Chicago; Suzie L. Lyons, Boston; Martha Strong, New York.

Inquiries of all kinds may be addressed to the Secretary, Mrs. H. C. Solomon, 74 Fenwood Road, Boston, Mass.

Revised Programme of the Ontario Health Officers' Association, May 21, 22 and 23, 1923

Physics Building, University of Toronto, Toronto

MONDAY.

First Session—

10 a.m.—Registration of delegates.

10.30—Moving Picture.

11 a.m.—Remarks by the Chief Officer of Health.

11.30—Dr. P. J. Moloney, District Officer of Health, "Co-operation in Health Work among Public Officials."

12 noon—Address by Dr. E. R. Secord, Brantford, President, Ontario Medical Association.

Luncheon—At Hart House at 1 p.m. (The members will be the guests of the Provincial Board of Health). Address by Hon. Mr. Justice Riddell, Supreme Court.

Second Session—

2 p.m.—Presidential Address. Dr. D. V. Currey, M.O.H., St. Catharines.

2.30—Mr. Wills MacLachlan, Toronto. "Resuscitation." Illustration of Schaefer Method.

3.00—Dr. H. F. Vaughan, Commissioner of Health, Detroit, Mich. "Some recent aspects of Public Health Administration."

TUESDAY.

Third Session—

9 a.m.—Moving Picture.

9.30—Dr. James Roberts, M.O.H., Hamilton. "The Schick Test and Active Immunization against Diphtheria."

10.00—Symposium on Tuberculosis.

Dr. Harold Parsons, of Toronto, will deal with the subject under the heading of "Tuberculous Contacts." The Pathology of Mediastinal Tuberculosis" will be discussed by Dr. I. H. Erb, pathologist to the Hospital for Sick Children, Toronto. "Tuberculous infection in infancy, and its effects," will be discussed by Dr. A. Davis, of Toronto. Interesting slides and material will be shown. A discussion will follow.

Fourth Session—

2 p.m.—Symposium on Cancer.

A paper will be read by Dr. Adam Wright, Chairman of the Provincial Board of Health, Ontario. After the reading of Dr. Wright's paper there will be a full discussion, with the following gentlemen taking up the subject from various angles:

Ulcers of the stomach and duodenum and their relation to cancer:

Surgical Aspect—Professor Clarence Starr, University of Toronto.

Medical aspect—Dr. Wm. Goldie, Toronto.

Gynaecological Aspect—Dr. F. A. Cleland, Toronto.

Cancer Statistics—Dr. Grant Fleming, Toronto.

Chronic Constipation—Dr. W. J. Dobbie, Weston, Ont.

"The Cancer Situation"—Dr. H. W. Hill, Western University, London, Ont.

X-Ray—Dr. L. R. Hess, Hamilton, Ont.

3.30—Dr. A. J. Slack, Western University, London, Ontario. "Milk and its relation to disease."

WEDNESDAY.

Fifth Session—

9 a.m.—Moving Picture.

9.30—Dr. H. S. Thompson, Dental Research Department, University of Toronto. "Dentistry and Health."

10 a.m.—Dr. J. G. Cunningham, Director, Division of Industrial Hygiene, Provincial Board of Health. "The Part-time Physician in Industry."

11 a.m.—Dr. W. L. Hutton, M.O.H., Brantford. "Smallpox."

11.30—Mr. F. A. Dallyn, C.E., Director, Division of Sanitary Engineering, Provincial Board of Health. "The Significance of certain vital statistics" (with slides).

Sixth Session—

2 p.m.—Mr. S. J. Manchester, Director of Vital Statistics; Registrar-General's Department. "Vital Statistics and causes of death."

2.30—Dr. F. G. Banting, University of Toronto. "Insulin in the treatment of Diabetes."

D. V. CURREY, *President.*
T. A. LOMER, *Vice-President.*
J. J. MIDDLETON, *Secretary.*

ONTARIO

The Provincial Board of Health of Ontario

COMMUNICABLE DISEASES REPORTED FOR THE PROVINCE FOR THE MONTH OF APRIL, 1923.

COMPARATIVE TABLE.

Diseases.	1923. Cases.	1923. Deaths.	1922. Cases.	1922. Deaths.
Small-pox	29	0	79	0
Scarlet Fever	329	11	249	11
Diphtheria	170	21	308	27
Measles	1,148	7	1,266	8
Whooping Cough	286	18	69	8
*Typhoid	338	54	13	7
Tuberculosis	173	118	207	135
Infantile Paralysis	4	3	1	1
Cerebro Spinal Meningitis	13	11	9	8
Influenza	.....	84	.....	.....
Influenzal Pneumonia	.....	22	.....	30
Pneumonia	.....	332	.....	375
Encephalitis Lethargica	.....	7	.....	.....
Syphilis	122	.....	194	0
Gonorrhoea	125	.....	165	.....
Chancroid	3	.....	6	.....

*Outbreak at Cochrane 286 case and 39 deaths.

Notes on Current Literature

From the Health Information Service, Canadian Red Cross.

LIBRARY BULLETIN, No. 26. March, 1923.

1. *Health Education.*

Dr. J. F. Williams of Columbia University, calls the attention of health workers to some of the most frequent errors in health education. "The Public Health Nurse," February, 1923, page 56.

2. *Industrial Hygiene.*

The Bulletin of the Department of Health of New York City for December, 1922, contains an address by the Deputy Commissioner of Health, on facts that should be known by the public regarding industrial hygiene.

3. *Dental Hygiene.*

In 1921 the British Medical Research Council appointed a committee to investigate the causes of dental disease. This committee has recently issued a report on the structure of teeth in relation to dental disease. Other reports on different phases of the subject will be issued from time to time.

4. *Social Hygiene.*

The Canadian Social Hygiene Council publishes a series of introductory studies in social hygiene. These studies are reprints of a series of lectures arranged by the Social Service Department of the University of Toronto. Copies of this pamphlet may be obtained from 207 York Building, Toronto.

5. *Pre-School Children.*

A report on the physical status of pre-school children has recently been issued by the United States Children's Bureau. (Bureau publication, No. 111).

6. *Prenatal Hygiene.*

A lecture on prenatal hygiene and problems of maternity and child welfare, delivered by Dr. W. M. Feldman before the Royal Institute of Public Health. "The Journal of State Medicine," January, 1923, page 3.

7. *School Lunches.*

"A Penny Lunch" is the title of a useful booklet giving directions for starting and conducting school lunches for children.

8. *Nutrition of School Children.*

The report of the U.S. P. H. S. for January 12th contains the result of an investigation of the height and weight of school children as an index of nutrition. The results of this investigation will be of interest to those who use height and weight tables in in school health work.

9. *Food for the Family.*

A revision of the booklet issued by the New Year Association for Improving the Condition of the Poor.

10. *Public Health Nursing.*

Nursing organization as developed in Toronto, by Dr. C. J. Hastings. "The Nation's Health," February 15th, 1923, page 6.

11. *American Red Cross Publications.*

The American Red Cross has recently issued the following new leaflets:—

(a) Manual of Organized Volunteer Service—A.R.C. 415
(b) Red Cross Instruction in Home Hygiene and Care of the Sick for Girl Scouts—A.R.C. 719

BOOKS ADDED TO THE LIBRARY.

12. *"Food, Health and Growth,"* by L. Emmett Holt, M.D., LL.D. Cloth, $1.65. Pp. 273. New York: The Macmillan Company.
13. *"The Healthy Child from Two to Seven,"* by F. H. MacCarthy, M.D. Cloth, $1.75. Pp. 235. New York: The Macmillan Co., 1922. A handbook for parents, nurses and workers for child welfare.
14. *"Making the Most of Life,"* by M. V. O'Shea and J. H. Kellog. Cloth, $1.05. Pp. 298. New York: The Macmillan Co.
15. *"Health and Cleanliness,"* by M. V. O'Shea and J. H. Kellog. Cloth, 95c. Pp. 297. New York: The Macmillan Co., 1921.
16. *"The Laws of Sex,"* by Edith H. Hooker. Cloth. Pp. 373. Boston: Richard G. Badger, 1921.

Editorial

HEALTH MACHINERY.

In spite of all our modern health conserving machinery we scarcely realize as yet either that health is a paramount consideration or the nature of the work which must be undertaken before we make possible the general elimination of disease. We have on the whole become so accustomed to the enormous waste envolved in a vast organization for the treatment of unnecessary ailments and to the even more serious social expenditure envolved in the existence of disease itself that our endeavours to conserve health have been expressed largely by the working out of schemes for dealing with disease problems whose solution is comparatively easy.

The elimination of typhoid fever from a community is not difficult. We understand the origin of the disease and its method of conveyance. Epidemics or occasional cases can be readily investigated and explained and preventive methods adopted generally in such a way that the disease can be done away with. This is demonstrated by the fact that such occurrences as the Cochrane epidemic for instance are very unusual in this day and age. This statement applies to all maladies in which the origin and method of transmission are fully understood. Malaria and yellow fever can be vanquished by an effective frontal attack on the mosquito. Plague, cholera, small pox and similar diseases are in the same category. Similarly the effective control of cancer depends on an understanding of what cancer is.

When one comes to such diseases as the venereal group, tuberculosis, and industrial diseases, we have an entirely different problem. Valuable as the establishment of venereal disease clinics and tuberculosis sanatoria may seem in dealing with such questions, in reality they constitute only first steps. These diseases exist because of neglect in fields far removed from those we generally consider as having to do with disease. Hours of work, shop conditions, housing conditions, moral teaching, the age of marriage, wages—these are the factors which must be considered in dealing with diseases which exist because of the faulty organization of society itself.

This being true the scope of the health officer's work widens. His trainng must be better and more comprehensive. His pay must be greater and his position more secure. The whole time health officer must be the rule rather than the exception—the Minister of Health—devoting his entire time to the organization of health activities should always be at the head. With such machinery we could look forward with confidence to a state of affairs far removed from that which exists at present. Then we may hope for not more hospitals but fewer, not more citizens trained in the art of curing disease but many trained and eager to prevent—hence longer, healthier and happier lives for the average citizens.

THE DRINKING CUP.

It is perhaps not extraordinary that it takes a good jolt to arouse most of us from complacency. A fine garden variety virulent cold in the head, for instance, might possibly arouse a live health officer to a most vituperative attack on the common drinking cup. He might suddenly remember that axiomatic statement of a learned and scientific preceptor that "a cup, glass, pitcher, spoon, fork or such article if used in common by two or more persons may transfer tuberculosis, syphilis or other infectious disease," to say nothing of the damnable thought beclouding, efficiency destroying, devilish affliction from which he is suffering himself. That the said affliction is so transmitted more than any other disease would obviously be very much to the point.

In the old days, before Pasteur came on the scene, a few germs between friends did not amount to much, and even the adroit custom of drinking near the handle of a cup or left handed was considered a foolish and superstitious concession akin to refusing to light three cigarettes from the same match. But times have changed and the advent of over a hundred thousand soda fountains on this continent—all potential disease spreaders in view of our modern knowledge makes one wonder how much supervision these marbled purveyors of liquid refreshment should be subjected to, and to what extent we should insist on the use of the paper cup—undoubtedly the cleanest and most sanitary of all receptacles—for such use. Here and elsewhere in places where people are wont to drink from cups or glasses used more or less in common, we have a problem.

Interesting information was derived from a recent investigation as to contaminated soda glasses undertaken by a State Board of

Health. It was found that generally glasses were used—paper cups only infrequently. Cleansing of the glasses after use was of varying types, ranging from mere rinsing in cold water to sterilizing. Cultures were taken from the rims of a series of receptacles of different types.

The main facts brought out by this investigation were: Forty per cent. of the glasses examined were actually infected with disease germs. An additional twenty per cent. were infected with putrefactive organisms. It was rarely safe to drink from the remaining forty per cent., and less than seven per cent. of these were sterile. One paper cup examined was found to have on its rim only a small number of harmless germs, although it had been standing on a counter for an in definite period.

Provisional Programme of the Canadian Public Health Congress

June 12th, 13th, 14th, 1923

EDMONTON, ALBERTA.

ALL SESSIONS TO BE HELD IN THE UNIVERSITY BUILDINGS.

TUESDAY, JUNE 12TH.

Registration—9-10.30.

A.M.—10.30 to 12—Sectional Meetings.

P.M.—2 to 4—Joint meeting of all Associations making up Congress.

Papers on the following phases of Public Health will be presented:—

Tuberculosis,
Venereal Disease,
Child Welfare.
Public Health Administration,
Laboratory and Research.

EVENING—

Public Meeting, University Buildings. Chairman, Lieut.-Gov. the Hon. R. G. Brett.

Addresses of Welcome—Mayor Duggan.

President's Address.

Addresses of popular nature dealing with Tuberculosis and its Prevention, and Social Hygiene.

WEDNESDAY, JUNE 13TH.

Morning—Sectional Meetings.

Clinic T. B., University Hospital.
Clinic Child Welfare, Civic Block.
Clinic Venereal Disease, Tegler Building.

Afternoon—Joint meeting of all Associations in attendance at Conference, under the Chairmanship of Sheriff Cook, of Regina. Papers of interest will be presented for discussion.

Evening—PUBLIC MEETING—University.

Chairman, Hon. R. G. Reid, Minister of Municipal Affairs and Public Health.

Among the speakers will be Hon. Dr. Uhrich, Provincial Secretary and Minister in charge of Bureau of Public Health, Saskatchewan.

THURSDAY, JUNE 14TH.

Morning—9.30, Annual Meeting of the Canadian Social Hygiene Council.

Afternoon—Sectional Meetings.

Evening—Motor Drive.

FRIDAY, JUNE 15TH.

General Meeting of Canadian Public Health Association.

Luncheon meetings are planned, and special gatherings of a social nature which will be provided, promise all those in attendance a profitable and enjoyable time.

HOTEL ACCOMMODATION, ETC.

Accommodation may be secured by any desiring same, at the University Dormitories at reasonable rates, or at the following Hotels. (All European plan—i.e., exclusive of meals.)

Macdonald Hotel—	
Without bath	$3.00 per day
With bath	$4.00 per day
King Edward—	
Without bath	$2.00 per day
With bath	$3.00 per day
Corona—	
Without bath	$1.50 to $2.00 per day
With bath	$2.50 per day
Selkirk—	
Without bath	$1.50-$2.50 per day
With bath	$3.00 per day
Royal George—	
Without bath	$1.00-$2.00 per day
With bath	$3.00 per day

It is suggested that those planning to attend the Congress make the reservations direct with the Hotel at which they desire accommodation.

The Public Health Journal

Vol. XIV. TORONTO, JUNE, 1923 No. 6

Certain Features of Child Welfare Not Sufficiently Emphasized

By Alan Brown, M.B.

WHILE much work has been done in the past few years to safeguard the life of the infant many other phases have come to light which exert more important influences on child mortality. I refer specially to pre-natal influences, the effect of syphilis on children and the degree of malnourishment existent among children of the school and pre-school age.

Let us first consider the Pre-Natal aspect.

We must face to-day the momentous question of providing our country with the means of more adequately safeguarding motherhood. Our aim should be to furnish every mother during pregnancy with intelligent oversight, to protect her from the dangers incident to industrialism, and to render childbirth reasonably safe. Reckless sacrifice of infant life should stop. Child bearing has long been regarded as merely the natural lot of women and its hazards have been either neglected or accepted as inevitable. Can a function, however, that kills thousands of women annually, that cripples many more, and that is responsible for a very large infant mortality, be called safe. Child-bearing still possesses for the mother many dangers, some of which are avoidable and some of which are not; but this we know and we know it very definitely, that the closer supervision during pregnancy and better care at the time of delivery, the fewer will be the complications and the more satisfactory will be the results.

Statistics reveal to us further information in that approximately 50 per cent. of operations on women are performed for injuries resulting at the time of labour; injuries many of which are preventable and most of which could be fairly satisfactorily treated at the

time of their occurrence or soon after. The truth is that we cannot estimate the number of partial or complete invalids who are invalids as a result of either poor nursing or inefficient medical attention at the time of miscarriage or at the time of labor. As a result of ignorance, thoughtlessness, and the failure to grasp the real significance of unnatural termination of pregnancy, thousands never recover health.

Turning to the new-born child, we find that although the loss in life due to still births is unduly high, and that although approximately 40 per cent. of all deaths of infants under one year are due to congenital causes, progress in remedying this condition is remarkably slow. Some conception of the number of still births can be obtained from the following figures:—

	Live Births	Still Births	
Toronto	1,200	500	42 per cent. live births
Ontario	6,500	2,500	38 per cent. live births

If we were to add to these figures the deaths among infants during the first week in life, the causes of which can usually be put down to pre-natal conditions, and to accidents at birth, the total would be surprisingly large. Should these figures not strike us as serious, or should we simply put down this loss of life as inevitable, something which we may expect, year after year? Would it not be wiser to inquire rather closely into this problem to see if a certain percentage of these babies might not have been saved? Might it not be possible to find that some of the causes which operate against the birth of a live child might be met and removed? Would it be surprising to find that a certain rather large percentage of these tragedies could be classed as preventable?

This is the era of preventive medicine; with properly organized clinics, such as can be established in progressive communities; I feel justified in stating that there should result a reduction of from 30 to 35 per cent. in the deaths under one month of age; a material lowering in the number of still births; a reduction in premature births of at least 25 per cent. and in the maternal death rate of from 60 to 65 per cent. below the general rate of unsupervised cases. This great conservation movement is, aside from its medical and nursing aspects, a great social undertaking. It is a fight against poverty, filth, tuberculosis, syphilis, and ignorance of the barest fundamentals of health. These are the hostile forces that are

ever busy, ever eager to accomplish the physical and moral undoing of the community.

Broadly speaking, it is not difficult to lay down standard requirements for cities, which must be of such a character that they can be carried out by general practitioners. Every mother nowadays should know what to expect from a pre-natal clinic or even her own physician; so I shall briefly outline what are recognized now as standard pre-natal requirements.

1. Monthly visits during the second half of pregnancy with examination of the urine.

2. A careful preliminary examination six weeks before expected date of confinement.

3. Reasonable care at the time of delivery, with observation of the ordinary rules of aseptic technique, with the understanding that suitable hospital accommodations are available for all patients presenting such complications as cannot be satisfactorily treated in their homes.

4. A careful post partum examination four weeks after the birth of the child, for the purpose of relieving or treating minor abnormalities and of detecting the existence of trouble in the birth canal that may require operative relief.

It appears to me that progress in this regard can be made only along certain lines.

1st. By a campaign of education, in which the women and their husbands are taught that it is their right and duty to demand reasonable care during pregnancy and at the time of labour.

2nd. By Federal legislation enforcing certain minimal requirements.

My second point, "on the effect of syphilis", on infant mortality has received very little attention till the last two years. In order to emphasize its bearing on the subject, I will give you a few facts which should be known by every layman.

Gonorrhoea affects the future of the race by making men and women childless. Syphilis affects the race by destroying outright 75 per cent. of the children of syphilitic parents before they are born or during the first year of life, and by crippling or weakening a considerable proportion of those who survive.

Children may acquire syphilis before birth, through the transfer of the germs from the body of the mother to the blood of the child, through the placenta, the structure which connects the child with the wall of the womb. If the child acquires syphilis through the

mother's blood within the first three months after conception, it is almost certain to die and the body be expelled, constituting an abortion or miscarriage. If it acquires syphilis from the third to seventh month, it may survive for a time, but is likely to be born prematurely and very probably dead. If it is not infected until after the seventh month of pre-natal life, it will probably be born alive, although it may die later of the disease. The time after conception that a child in the womb is likely to be affected varies to a certain extent with the activity and age of the mother's infection. If she has been recently affected and there are still many germs in her body and frequent showers of them circulating in her blood, the child has almost no chance to escape. The result is a miscarriage or abortion, repeated again and again whenever the woman becomes pregnant. Some of these abortions occur so early that the woman may think she is simply suffering from irregular menstruation. As the mother's infection becomes older and less virulent, the child is not infected until later in the pregnancy, or may even escape altogether. It may die if infected, resulting in a still birth, or it may live and show its first signs in the first few months after birth. Again it may live, seem in fair health, and show no signs of the disease until it is from 5 to 10 years old. There are a few instances in which no signs develop until the age of 25.

The late effects of syphilis in the child are numerous—about 5 per cent. of idiotic children are so, as the result of syphilis. Many others show changes in the teeth and bones, while the large majority of older children are below par physically. Many syphilitic children suffer from an eye condition which clouds the glassy part of the eye and many of these have impaired vision. Many children lose their ability to earn a living as a result of this disease and become burdens upon the family, community and State. The inmates of deaf and dumb asylums and schools present in all probability a high proportion of syphilitics.

The time has long past when subjects of this nature should be veiled in a cloud of secrecy and prudism should be cast aside and the facts faced in a reasonable manner. Only by the recognition of such facts by the layman will satisfactory progress be made toward their elimination and the consequent reduction of infant deaths be affected.

The third and last point which I want to bring before you is that of malnutrition among children of the pre-school and school age.

All children of pre-school and school age may be divided for the sake of discussion into three groups; the sick, the well and the malnourished. The sick are cared for at home and in the hospitals. The well are inspected (at least they should be) and receive a certain amount of preventative care from school physicians. The malnourished, about one-third of all children, receive no treatment for their malnutrition as such, because they are considered well by both private and school physicians. These underpar children make it impossible for the schools to reach reasonable standards of achievement. At the same time the system of school organization compels the teacher to attempt to crowd the pupils through the various grades at high pressure, thus adding to the burden of the under-developed and delicate child. As a result 26 to 58 per cent. of those graduating from elementary schools are physically unfit.

It is remarkable that this group of children has received so little attention. They pass through hospital clinics unnoticed because malnutrition among older children is not considered a diseased condition. A recent survey made in four of the public schools in Toronto showed that 28 per cent. of the children were 7 per cent. malnourished, while 17 per cent. were 10 per cent. underweight, and yet these children were supposed to measure up to normal children. I am firmly convinced that malnutrition is fairly prevalent throughout the whole of our country. In fact fully 40 per cent. of private practice among children of this age is among children belonging to this malnutrition class.

What then are the underlying causes of so much malnourishment? In our clinics for this type of child we have found that almost 50 per cent. of it is caused by bad management at home such as fast eating, insufficient and improper food, late hours, closed windows at night, too little time in the open air, poor hygiene, over pressure and long hours at school. The remaining 50 per cent. of it was found to be due to previous diseases or obstruction to the upper air passages such as enlarged tonsils, diseased teeth and rickets. In only an occasional instance was it impossible to determine the exact cause of the existing malnutrition.

Having then found the causes of the malnutrition by means of physical, mental and social examinations, it requires the co-operation of child, physician, nurse and parent to remove them and at the same time to secure for the child the essentials of health. These children can be best managed in clinics specially arranged for them following along the line of class instruction. The essentials are the

removing of physical and mental causes of poor nutrition, getting the children to take sufficient and proper food at frequent intervals, securing fresh air by day and night, preventing over fatigue and establishing sufficient home control to ensure good food and health habits. If these results are accomplished, the child should rapidly gain weight and become well and strong, because of a powerful force in nature that makes for health. Some idea of the manner in which children respond to classes of this nature may be gleaned from the fact that in one of our malnutrition classes out of 94 consecutive cases the gain in weight was 133 per cent. over and above the expected gain.

The business of keeping the children of our country in good physical repair is a disgrace to the Dominion. The great majority of people, even the intelligent people, fail to appreciate the significance of physical defects. Their ignorance does not prevent the penalty of injury from falling relentlessly upon the young lives.

One of the most appalling revelations of recent years is the fact that the rural children in this country are on the average less healthy and are handicapped by more physical defects than the children of the cities, including all the children of the slums. The chief reason for this physical inferiority of country children seems to be that city children now receive in a great many intsances, more health care than do those in rural regions. In the past most of our best human material for leadership in city and country has come from the farms. In the future, the raw material to supply the needs of civilization including the best human supply, must come from the soil. If rural Canada is to continue to be a satisfactory nursery for human life for the Dominion, it must provide conditions favourable for the cultivation of the best possible human material.

The ideal health programme which lies before every community is a complex one, involving the co-operation of parents and teachers with school physicians, child welfare nurses and physicians and all other authorities relegated to this important branch of work. The amount of work which needs to be done in every community may well seem discouraging. There is, however, no need for discouragement if there are in that community but two or three earnest workers who will take upon themselves the task of setting the ball rolling.

There should be in every community a permanent group of people whose main object is the protection and development of Child

Welfare and especially of Child Health. The routine which lies at the very foundation of all effective health work is a very prosaic business, necessitating conscientious, day by day attention to innumerable details which can be slighted all too easily. The workers engaged in this basic work need the inspiration and the stimulus which come through the knowledge that their work is being watched and fully appreciated by the best people of the community. In a democracy it is only through the unflagging interest of such a permanent committee that we can hope to counteract our usual indifferences to matters which seem to be the business of nobody in particular. A committee of this kind should consist of representative physicians, delegates from Women's Clubs, Churches, Settlements, and other civic organizations interested in Child health.

The personnel is all important. It is a temptation to appoint people who are prominent in society, or who are liberal donators to this or that good movement. Such inert committees are merely stumbling blocks in the path of progress. A few honest people with common sense and energy and an absorbing determination that the children of their community shall have the best possible start in life can always be found. Although they may in some cases be unlettered and of humble origin, the committee of which they are a part will be a living force in the community and not merely a figurehead.

Socrates in his wisdom wrote:—"In every work the beginning is the most important part, especially in dealing with anything young and tender."

Fundamentals in Planning Small Community Hospitals

By B. Evan Parry, M.R.A.I.C., *Supervising Architect.*

IN the selection of the site for a new hospital it is necessary that the trustees should approach their problem without prejudice, there being many conditions which will tend to warp their judgment and lead them to a decision on grounds of expediency, which will in the end prove unsound and possibly prevent further growth and necessary expansion.

Therefore, in the choice of a site one must consider not only the location ideal from the point of view of the patient, but its accessibility for patient, doctor, nurse and service. The resultant of these forces will usually be somewhat of a compromise for all the factors in the case.

In country or suburban sites, a choice collection of gravestones may be in view, or a farmyard that distills odours that will drift in at the windows or across the lawns. A site in a district now nearly residential may be chosen, and in less than a generation the character of the community may have so completely changed as almost to warrant the abandonment of the plant. All of this indicates the wisdom of securing either an ample area in the beginning or a location where future expansion can be secured without prohibitive costs.

The orientation of a hospital building is an interesting study from the theoretical and practical sides. Physicians and scientists are well satisfied that the healing effect of the sun's rays and open air is beyond question. To almost every patient it is desirable to bring these helpful agents in as full a measure as possible, and in the ideal hospital every room would have a full sun bath all day long. Unfortunately this is not possible, but it is possible to so locate the building that under certain conditions and at certain seasons every side shall have the sun for a portion of the day. When the building goes beyond the simplest rectangle in plan, with an east and west axis, this means a distinct study.

The best results in our northern sections are secured by rooms facing south, and average results by rooms facing, in general, southwest or southeast.

With the site selected, the preliminary survey made, the diversities of the problems presented in the planning of a small community Hospital would be simplified if it were possible for the trustees to place before an architect a complete schedule of requirements. This, however, is seldom done, owing to the fact that the trustees are usually men engaged in business and little accustomed to social and medical needs and, further, to the fact that the members of the medical staff are inclined to measure needs from the point of view of their own interests.

It is to be sometimes noted that if the medical staff does not contain a pediatrist and further, when the medical staff are not especially interested in children the accommodation for children's services is often limited.

Again, if one of the medical staff is a specialist in X-ray it will be found that perhaps unnecessary commodious accommodations will be asked for in connection with that science, whereas if no specialist is on the staff the X-ray needs generally are underemphasized.

Regardless of the needs of the community occasionally some of the staff will argue against a dispensary, since they are loathe to give their time to it and because it may tend to lessen their private practice.

Owing to these factors, and many similar, it is difficult to determine what the hospital should be in variety and size of services.

The housing of the personnel and staff, it is recommended, should be provided in a separate building outside the hospital, but adjacent thereto, and connected by covered ways in such a way as to provide protection during inclement weather.

After the architect appointed has received the trustees recommendations he should endeavour to estimate the probable income from the accommodation provided as represented by wards and private rooms and weighed against the estimated operating costs. The trustees being in possession of this information, such data would act as a basis on which to determine their probable resources and liabilities.

When presenting the case to the trustees the adjustment of private rooms to the class of patients likely to use the hospital should be borne in mind.

A bath in connection with a private room may be looked upon as a luxury. A toilet, however, is not only serviceable, but also saves many steps for the nurses.

Toilets for both men and women should be provided on each

floor. Many methods of placing toilets and bath to provide proper segregation with a maximum of economy have been tried. One arrangement observed by the writer, which has proved satisfactory, is that of placing between two private rooms one bath for use of both with individual toilets for each.

Experience has shown this to be thoroughly practical, inasmuch as one bath tub serves as many patients as the two toilets. Two tubs would be uneconomical in space and plumbing fixtures.

Another arrangement which is sometimes carried out is that of omitting the bath and providing a toilet in common between two rooms, each room being supplied with its own wash basin.

In the best modern practice it has been found very necessary and desirable to provide each private room with a hat and clothes closet, but the ordinary square or horizontal closet projecting into the room should be avoided, as it not only interferes with the arrangement of furniture, but spoils the appearance of the room.

When it is considered that a nurse serving six patients during the morning hours will walk on an average from 4,000 to 5,000 feet it will be apparent that serious consideration should be given to the proper location of service facilities. The successful accomplishment of which greatly reduces the time and distance necessitated in such service.

Objection may be offered to a method of duplication of service rooms and facilities represented by added costs to the structure, but in the final analysis the operating costs would be greatly reduced; therefore a general policy as to costs must be determined by the trustees.

The problem of planning a small hospital is somewhat accentuated by the fact that most of the facilities in use in a larger hospital are needed. Yet the funds are so limited that the spaces must be used jointly for two or more services. For instance, the X-ray machine could be installed in the Superintendent's office, if the Superintendent was an X-ray operator, which is sometimes the case. In most of the hospitals of the type under consideration, the Superintendent, a woman, is superintendent of nurses, instructor of nurses, operating-room nurse, X-ray operator and general plant manager. Under such conditions facilities may be more readily combined, since but one facility is used at a time.

When the general character of the hospital to be built is determined attention can be given to the arrangement of entrances, administration spaces, laboratories, food service, auxiliary rooms,

and all the many and complex details of arrangements and accessories.

In order to more easily control the exit of employees, entrances and exits should be as few as practicable. The main entrance in the small community hospital is sufficient to take care of visitors to ward patients and those in the private rooms.

An entrance should be arranged for emergency or accident cases. This entrance could also be used for outdoor patients if such services were considered necessary for the community wherein the institution was built.

A dispensary should be arranged adjacent or in the emergency room. The emergency and ambulance entrance should be shielded from the point of view of the public and also from the patients in the hospital.

If a morgue is considered necessary for the placement of bodies it should be so planned on the floor below that used by the visiting public.

Means of entrance should be arranged for transportation of supplies as occasion demands, as also a means of exit for personnel operating the various services on the lower ground floor.

Adjacent to the main vestibule should be bench accommodation for people visiting the patients, not necessarily to any great extent, as in this particular case the friends of the patients are not likely to come at one time in large numbers. Further, this accommodation is useful if the friends happen to come when the patient cannot be seen upon their arrival.

Administration spaces will be governed in the main by the size of the hospital. One fair-sized room in this case will answer the purpose of all administrative functions. Accounts and records are usually very limited in a hospital of this size.

The three important elements in the care of the patient outside of housing, medical and nursing care, are to properly feed, warm and provide him with clean linen. Provision for these should be made, more particularly the kitchen placed so that it should be sufficiently near to make the dispensing of palatable food possible.

With the heating media at the disposal of the trustees and the vast variety of labour-saving devices for preparing food, there is no excuse for food improperly cooked or served. The kitchen must be planned for economic service from the receiving of raw supplies to the service of the patients' trays. The kitchen should be planned on the same principles as a factory for the conversion of the raw products to the palatable food. Avoid "cross current" of service;

don't mix the washing of pots and pans with the making of "puff paste," and when the food is ready to be served it should reach the patient quickly without deterioration. Steam tables, toasters and cookers, food carriers and dish-washers of approved pattern, are all important factors. Not only the reception and preservation of food supplies are necessary, but the hygienic disposal of garbage and refuse must be considered.

An excellent method for the disposal of waste product is that of an incinerator connected with the heating flue and approached from an independent passage where all hospital refuse may be incinerated; and, further, provision made for the temporary housing of what is called "garbage" in a section of the refrigerating area in such a way as to prevent its disintegration.

The kitchen should be adjacent to the dining-room for the officers and help. In small hospitals the patients' trays can be set up in the main kitchen and delivered from there direct to the patients, or, as an alternative, carried in thermos carriers from the kitchen, placed in the dumb-waiter and taken to food service rooms adjacent to wards or private rooms. In the latter case the trays would be set up and from there delivered to the patients.

The place and manner of washing patients' food dishes is another function which must be determined. They may be sterilized in each food service room or transferred from and returned to the main kitchen, and there sterilized by a mechanical dish-washer. Experience has proved the value of sterilizing dishes used by patients by the decrease in cross infection where such process is carried out.

Again a decision must be reached as to whether the food, after it is taken from the range, and pending the time it is to be served, is to be kept conditioned in steam tables or otherwise.

In determining the set equipment of the food service rooms another question must be decided, namely, where special diets are to be prepared. If they are prepared in the food service rooms by nurses, a suitable equipment in refrigerators, stoves, etc., must be provided. If they are prepared and sent from the main diet kitchen in or adjacent to the general kitchen less equipment will be needed in the food service room.

The foregoing matters must be decided before the main kitchen or the service rooms can be planned. One factor, however, remains constant, namely, that room must be provided adjacent to the wards for the bedside trays, cutlery, condiments, napkins, etc. It cannot be emphasized too strongly the importance of having the

system of food distribution fully discussed and settled before final plans are prepared.

For diagnostic purposes small hospitals should have relatively the same laboratory facilities as do large ones. However, a small hospital cannot afford the space for such purposes as can a large hospital. Thus, in a small institution it becomes necessary to use one space for several functions.

The minimum requirement is one room to be used for radiographic, fluoroscopic and cystoscopic work, adjoining this should be a dark room and stock closet.

Diagnostic laboratory work should have the same range in a small hospital as in a large, but it is impracticable to afford either the space or the equipment in a small hospital as provided in a large one.

The minimum requirement is one room with a sterilizer, small incubator, sink, table, refrigerator, cabinet and gas. In this room the usual routine diagnostic examinations can be made. Little beyond this is likely to be done, since the work is usually carried on by an attending member of the medical staff.

Autopsies are seldom performed in a small hospital, therefore special accommodation would not be required.

Sun and air are very important therapeutic agents. No hospital should be without them. The open balcony or porches are for fresh air treatment. These porches should be provided with portable windows and heated, being used principally by convalescent patients.

Patients either in a ward or private room need a change and the enclosed porch affords a place of diversion and assembly.

For a general hospital of the capacity now under consideration, the continuous balcony is not desirable or necessary, as in practice they appear to be unsatisfactory; except in the cases where infectious diseases are dealt with, in which case they are used for the purpose of visiting patients without coming in direct contact with them.

A ward is usually considered a room in which four or more beds are placed and are generally used for patients who can pay little or nothing for care in the hospital. Considering the welfare of the patients, wards should contain but few beds; although from the point of view of operating economy as many beds could be placed in one room as can be efficiently supervised by the nurse in charge.

Particular attention should be given to the width of doors

which should be at least 3' 6" wide, 4' being preferable for the passage of beds.

Often in actual practice, when dealing with an institution of this capacity, it is desirable to have a children's ward, in which case the balcony or porch should be large enough to form a solarium, so beneficial to children in the convalescing period.

It is desirable to provide a delivery room for maternity cases.

Private rooms may be of great variety of size and facilities, according to the finances of the hospital and the class of patients to be cared for.

The simplest room may be eight by twelve feet with no running water or closet, in which case the bed would require to be placed at right angles to the outer wall. However, it is preferable to have the bed parallel with the outer wall, in which case the minimum width of room should be about nine feet, ten feet being preferable and the length thirteen feet.

A room eleven by thirteen feet is very convenient to work in and more desirable for a patient. Sometimes semi-private rooms are called for and usually would contain two or three beds, preferably separated by a curtain or a permanent partition of sheet metal or glass.

All private rooms should have running water, if possible, with toilet accommodation as hereinbefore referred to.

In addition to the food service room each ward or group of private rooms should have a utility room, nurses' station, bath and toilet, a place for clean linen and for soiled linen, stretchers and wheel chair closets. When feasible a case for flowers should be provided.

A utility room usually is equipped with a sink, laundry tray, bed-pan hopper, utensil sterilizer, instrument sterilizer and gas point. There should be floor space for a table and waste receptacle. If convenient a blanket warmer should be arranged for and so located that it can be used also as a utensil warmer.

The nurses' station is often a subject of much discussion—whether in a chart room set apart, where she may be quietly by herself; in an enclosed section of the corridor, with observation windows giving a lookout up and down the corridors; or in the open corridor where she would have an unobstructed view of the entrances to the rooms and utilities. With private room service it would make little difference so long as the location was near the centre of service, preferably in the corridor or in a booth projecting into the corridor. Wherever this station is, at that point should

be concentrated the annunciator for the patients' calls for the nurse, the telephone and the medicine cupboard. Further, adjacent to this station a linen room is often planned at the rear of same, which room is fitted up with shelves for linen, trays and other accessories.

Soiled linen may be placed in hampers or dropped down clothes chutes. Although the objection to the latter is that unless they are enclosed and made accessible only to an employee who is assigned to the task of putting the soiled linen in the chute they prove unsatisfactory by the inside of the chute becoming fouled by carelessness of other members of the staff.

The minimum operating service is one operation room for general operations, which room need be no larger than 16 x 20, or having from 300 to 350 square feet. Anything beyond this, excepting for observation space is waste of room. The surgeon's dressing room and a room used co-jointly for sterilizing and nurses' work room would complete the unit.

An anesthetic room is desirable, but this function can be performed in the operating room if space is not available.

The surgeon must have a room in which to dress. If room be adjacent to the operating room his final wash up may also take place in this room. So far as possible the operating suite should be so located that visitors or employees do not pass by the rooms.

Where possible set fixtures for washing instruments and for disposal should be in a room or space separate from the sterilizing room. If the nurses' work room be not adjoining the sterilizing room, it is advisable to have a dressing sterilizer in the nurses' work room. This room should have space for making up surgical dressings, cleaning of instruments, scrub-up provision for the nurses, sink used in preparing saline solutions, ample cupboards or cases in which to place material to be sterilized and having been sterilized; as it must be looked upon as the general work room of the unit.

The sterilizing room should have a water sterilizer, dressing sterilizer, if it be not in the nurses' work room, one or more instrument sterilizers, sink and room for one or more tables. Adjacent should be a blanket warmer and saline closet. The blanket warmer may be used for this purpose.

The important item in operating room construction is lighting. A direct north light is desirable, and it has been found that the vertical window, extending far enough above the normal height of the ceiling to give a direct light, has proved very satisfactory, and

is largely replacing the skylight. For artificial lighting, most surgeons prefer a diffused light, and this can be obtained by the placing of semi-reflecting ceiling lights on either side of the operating table, but not over the table.

A central floor drain is desirable and electrical outlets on the walls needed. A hose connection for washing the rooms should be provided.

A delivery room should be provided separate from the operating room. It is a good thing, if practical, to have a labour room adjacent, if possible. In the delivery room may be the wash-up for the obstetrician. There should also be an instrument sterilizer, a pack sink and a disposal sink. Closets or cupboards for supplies should be ample.

In most of the larger hospitals and in some small community hospitals a creche or baby room is provided, which should have a special infant's wash sink with gravity flow of water, automatically tempered, a compartment case with a division for each infant's supplies and shelf for the cribs.

Too little thought is usually given to the provision of reading matter for the patients. In some hospitals provision is made for the hospital library, and books are brought to the patient; in others portable bookcases on wheels, upon which the books and magazines are arranged, are wheeled to the bedside and the patient given the opportunity to make a selection from the library shelves.

For a patient weakened by sickness the bound book or the magazine with its large proportion of advertising matter and its stiff binding is often too heavy to hold, which problem has been solved in some of our hospitals by making careful selections of single stories from magazines, cutting them out and neatly enclosing them in stout covers with the name of the story, its author and the magazine from which it was taken. This system has been named the "Pass It On" library.

In considering the question of new hospital construction the question arises as to whether it shall be of fireproof or non-fireproof type. Very often trustees and individuals, while recognizing the many advantages and great desirability of non-combustible accommodation, incline to the use of non-proof or semi-fireproof type, actuated by motives of economy and fear of the difficulties to be encountered in providing the requisite funds. However, where conditions warrant one-story structures, or even one and a half, wooden construction would appear to be permissible from the point of view of the safety of the occupants, but buildings of combustible

type, even with masonry exterior walls, are generally not morally justified in excess of two stories in height.

Favourable initial cost, outside of consideration of the length of the construction period, would appear to be the sole argument in favour of non-fireproof hospital buildings, while the advantages with respect to maintenance costs are decidedly in favour of the fireproof type.

No thoroughly satisfactory floor for hospital use has as yet been devised. Tile is sanitary, easy to clean, has low up-keep, but is expensive and hard on the feet. Terrazzo will crack and at times will roughen. Magnesite floors are easy to lay, cheap, but not durable. They will usually crack and often peel. Wood floors have cracks and require constant attention. Their daily care is expensive. Cork lino, if fully seasoned before laying, and then properly laid, is on the whole a very satisfactory floor for wards and rooms that do not have rough usuage. For private rooms wood or cork lino or a combination is very satisfactory. In corridors cork lino, rubber or terrazzo are durable and acceptable; for kitchens and operating rooms tile.

Artificial ventilation, except for operating rooms, kitchens and toilets, is a needless expense. Seldom are ventilating systems used even though installed in private rooms and wards. It is better not to depend upon them. Window ventilation can be made satisfactory and draughts avoided if the windows are properly designed.

No ceiling fixtures should be used in wards or private rooms. It is difficult for a patient lying on his back to avoid the light from a ceiling fixture. Side fixtures are preferable. At each bed should be a light plug for reading and use of physicians when examining patients.

In small hospitals no call systems are needed, although in a hospital of moderate size a call system for nurses is desirable, especially from private rooms. No call is needed for doctors. Audible calls are disturbing to the patients, lights are preferable.

Stores centralized and under the control of a storekeeper is advisable. A root cellar will be found convenient where potatoes and other vegetables are bought in large quantities. The refrigerator should be divided into two parts, one for meats and one for vegetables. Milk should be kept in an ice box made for the purpose, and the stores for kitchen supplies should be located as close to the kitchen as possible. Only daily supplies of food and materials should be issued, so no auxiliary store room need be provided.

Storage space is very essential for broken furniture, mattresses, surplus bed, cots and a great variety of things.

It is advisable for a hospital to have its own laundry. Much of its laundry is in such condition that a commercial laundry does not care to handle it. Although it is preferable to place the laundry in a building separate from the patients, yet the lower ground floor of such a hospital under consideration is a feasible place provided it be well ventilated. The equipment is very similar to that used in a commercial laundry. Separate washers for staff laundry are advisable.

If the hospital be not too large, the heating system could be that of hot water, which is preferable to steam, inasmuch as the radiators for that system are never hot enough to burn the patients. A factor which must be considered. All radiators where possible should be placed under windows. The heating plant should be placed in the lower ground floor, although in larger hospitals a separate building is preferable.

Lighting generated by a hospital plant is usually more reliable than that purchased from a commercial company, and such lighting sets are easily obtainable in any part of the Dominion.

The question whether ice should be made or not by refrigeration is for local determination.

Ample space should be provided for repairs, such as that for carpentry, painting, etc. Frequently too little attention is given to this phase of hospital operation, and in consequence considerable expense is often occasioned through the lack of same.

In the foregoing a general resume is given of the most common and important spaces and facilities required in rural community hospitals, others can only be determined by the study of local problems.

Health Work Among Students

By Geo. D. Porter, M.B., *Director, Health Service, University of Toronto.*

The University Health Service which aims at the promotion of health and physical fitness among the students, has now been in operation for two years.

As physical training is now compulsory, it is necessary that the student should first receive a physical examination which will properly classify him for the work, so that he may take the form and amount of exercise best suited for his needs.

Examinations.

For this purpose a staff of physicians chosen by the Professor of Medicine have examined the students of the first two years, and the athletic teams, 2,193 in all. 726 men were examined twice. The Professor of Pathological Chemistry had the urinalysis (a very important part of the examination) made for a large number by the medical students in his Laboratory under his supervision.

A staff of specialists are also re-examining those referred to them for this purpose. (360 re-examinations.)

Results.

The results of these examinations are most gratifying as regards the general standard of our students, as it has been found that 98% of them are able to take physical training. We find that there are:—

Physically fit and able to take all gymnasium work	93%
Men with some disability requiring supervised exercise	5%
Physically unfit (some temporarily and a few permanently) and exempt from all gymnasium work	2%

Classification.

A-1—Students who are physically fit. May take heavy exercise and athletics.

A-2—Physically fit. But owing to light weight, under development, etc., may take light exercises, but should be instructed what games to play.

B-1—Students with some defect remediable or otherwise. Must take light exercise and remedial gymnastics.

B-2—Students with some disability. Temporarily unfit for any gymnasium exercise. To report later.

C —Students with some disability not remediable. Exempt from all gymnasium work.

RESULTS.

1921		1922
937	A-1	996
348	A-2	378
125	B-1	70
35	B-2	24
5	C	2

Of the 206 men re-examined this year who were below A-1 last year 127 men (about 61%) have been raised in their physical standing. Improvements due to:—

1.	General health, weight, etc.		49
2.	Improvements shown by urinalysis		23
3.	Heart conditions improved		18
4.	Chest conditions improved		5
5.	Feet improved		4
6.	Eyesight improved		1
7.	Recovered from illness		4
8.	Scoliosis		1
9.	Operations		18
	Appendix	2	
	Hernias	3	
	Tonsils	5	
	Nose	2	
	Mastoid	1	
	Hammer Toes	2	
	Root Abscess	3	
10.	Partial Paralysis		1

(Thirty-nine of these men were taking supervised exercises last year, are now physically fit, 17 of these men who were unable to take any P.T. last year are now taking it.) Of the 640 men re-examined this year who were able to take P.T. last year, 26 men (about 4% have been lowered in their physical standing, due to illness or lack of condition generally.

Bronchitis	8
Albuminuria	5
Diphtheria	1
Loss of weight	2
Indigestion	1
Eyesight	1
Phlebitis	1
Painful arches	1
Goitre	2
Tonsils	2
Heart condition	2
Total	26

While some of this improvement is due to the general environment and healthy conditions of student life, it is evident that some of it is also due directly to the medical advice and care of the Health Service.

VENEREAL DISEASES.—It is pleasing to note that no case of syphilis has been found in our examinations of the first three years of the student body. As for other venereal diseases (gonorrhœa), while doubtless here and there cases have occurred, no evidence of this disease has appeared during our examinations, and when it is realized that, the examinations are compulsory, that everyone comes up stripped before us, and that these examinations are all completed in a period of four or five weeks' time, it is evident that we have a remarkable freedom from venereal diseases in our University.

ATHLETICS.—We have examined all the athletic teams, track teams and athletes, and in a few cases have prevented students from taking part in athletics and games and gymnasium owing to weak hearts or other conditions making their participation harmful. We have also kept a number with some infection from the swimming tank.

ADVICE.—While assuming no responsibility for treatment of those who are ill, we give advice to a large number, and make it our duty to urge proper medical care where needed. A large number of minor injuries, received in the gymnasium or on the campus have been attended to during the year.

LECTURES.—Last year one lecture on personal health was given to the first and second year students in all faculties.

The co-operation of the men from the different faculties, the

students and the Athletic Directorate in the initial work of the University Health Service has been most encouraging.

ILLNESS.—Among those able to take physical training last year 85 men in the first and second years had exemptions owing to illness from two weeks duration or over to a whole term, averaging 40 days each. (Last year 65 men in the Medical Faculty alone made application for exemptions from attendance at classes on account of illness of one week or over.) Based on time lost by these 85 men it means an average of two days loss for each student, and as there were also (without including Dental students) 838 exemptions for shorter periods than one week, the total sickness loss time must amount to a college week per student.

It is shown also that there are many defects and disabilities among the students, the great majority of which cannot be corrected by gymnasium work, but require medical treatment. Students with such defects should have advice pointing out where necessary the desirability of proper treatment. The following may be mentioned as examples:—

17 Serious Heart Lesions,
6 Cases of Tuberculosis,
31 Hernias,
8 Hyperthroidism,
17 Nephritis.

It is clearly recognized that advice only and not treatment by the Health Service is given. Certain physical conditions as shown in the Medical Report are known to the students themselves, and are of such a character that they may cause considerable worry and anxiety. A talk with a medical adviser removes such apprehensions and saves these men from seeking the advice of quacks.

Six hundred and fifty students showed errors of refraction, many of these were unaware of the conditions, and these were advised to seek the advice of an eye-specialist. These facts show the importance of medical examination and advice. There are also daily emergencies requiring attention.

Infections are also controlled by proper inspection, and the student body is thus protected.

Graduates of the University become leaders in their community and they should leave the University with some knowledge of health matters. The Health Service should be responsible for lectures in health, and spreading such information by private advice at the time of physical examinations.

In spite of the good showing of our students it will be seen by

the accompanying medical findings that they have many defects, many of these are of but little importance, but a large number of them are serious disabilities.

MEDICAL FINDINGS, 1921-1922—1922-1923.

Number of students examined once	2,193	
Number of students examined twice	726	
Number of students examined by specialists	360	
Total number of examinations	3,279	
Number of Freshmen (1921-22)	1,380	
Average age of Freshmen	19	yrs.
Average height of Freshmen	5' 8"	
Average weight of Freshmen	137	lbs.
Average gain in weight during the first year	3	lbs.
Special blood pressure taken	580	
Average systelic pressure	126	
Average diastolic pressure	71	
Urinalysis, of 550 tested:—		
Albumin present	118	
Sugar present	10	
In 2,193 students examined heart murmurs present in	300	
Of these there are organic lesions in	19	

WEIGHTS.

Of last year's freshmen remaining same weight	37	
Of last year's freshmen losing weight during the year	103	
Of last year's freshmen gaining weight during the year	374	
Average loss to those losing weight	4	lbs.
Average gain of those gaining weight	5½	"
Total average gain of 514 freshmen during the year	3	lbs.

Poor Posture	344	
Poor Nutrition	241	
Spinal Curature, Scoliosis	138	
Lordosis	37	203
Kyphosis	28	
Bow legged	4	
Knock kneed	1	

	Genu Varus	1
	Talipes Equinovaius	1
Flat feet		263
	Flat with weak or painful arches	21
	Total	284
	Hammer toes	16
	Hernia	31
	Varicose Veins	39
	Varicocele	273
	Hydrocele	7
	Undescended testicle	4
	Atrophical testicle	4
	Phymosis	2
	Spina Bifida	1
	Multiple Exostosis	3
	Epididimitis	3
	Staphyloccocus Infection of Rectum	1
	Osteo Myelitis	2
Synovitis Knee		3
	Phlebitis	1
	Arthritis	3

HEART.

Total number of students examined	2,193
Disturbed action	59
Mitral Systolic murmurs	137
Aortic Systolic murmurs	20
Pulmonary Systolic murmurs	41
Tricuspid Systolic murmurs	2
Mitral & Aortic Systolic murmurs	7
Mitral & Pulmonary Systolic murmurs	7
Mitral, Aortic & Pulmonary Systolic murmurs	8
Total of the above probably functional	281
Mitral Regurgitation	4
Aortic Regurgitation	5
Mitral & Aortic Regurgitation	4
Mitral Stenosis	6
Total Organic Lesions	19
Total Number of Heart Murmurs	300

CHEST CASES.

Asthma	5
Pleurisy	1
Bronchitis	32
Tuberculosis (have since left University)	6
Pulmonary cases with abnormal physical signs	64
Total	108

EYESIGHT.

Totally blind	1
Blind in one eye	4
Errors of refraction	643

EYES.

	Blepharitis	1
	Conjunctivitis	1
Total		650

HEARING.

Deaf	1
Defective	83

EARS.

	Otitis Media	3
Total		87

Nose obstruction	171
Tonsils, enlarged	237
septic	14
tonsilitis	8
Total	259

Pharyngitis	6
Vincent's Angina	1
Hay Fever	1

Teeth, poor	175
root abscesses	8
pyorrhoea	4
Total	187

Skin Diseases.

Infectious—		
Scabies	1	
Ringworm	2	
Furuncles	3	
		6
Not Infectious—		
Acne	8	
Ichthiosis	1	
Eczema	2	
Herpes Zoster	2	
Psoriasis	4	
Impetigo	1	
		18
Total		24

Thyroid enlarged	121
Hyperthyroidism	8
Total	129

Venereal Diseases.

Syphilis	0

(In this connection it may be mentioned that a class of 65 medical students had Wassermann tests made, and they were all negative. We took but one Wasserman on a suspicious case which proved to be negative.)

Gonnorrhoea	0

No gross evidence of gonorrhoea was seen, and we had no acute or chronic cases, but cannot say that some of the students may not have been infected in the past.

Ankylosis.

Of knee	3
Of elbow	4
Total	7

War Wounds.

Ventral Hernia	1
Amputation cases	2
Blindness	1
Blind in one eye	3
Depression of Skull	1
	8
Ankylosis cases (already mentioned)	4
Total	12
Atrophy of leg	2
Paralysis of leg	3
of arm	6
partial of face	3
Total	12
Jaundice	1
Insomnia	1
Indigestion	6
Migrane	1
Chorea	4
Stammering	5
Cleft Palate	1

Kidneys.

Total number of Urinalysis made	555
Haematuria	1
Albuminuria, three plus	2
" with granular casts	14
	17
Total nephritis cases	17
Albuminuria, slight trace	7
" trace	27
" one plus	27
" two plus	7
" with blood pressure of 140 or more	17
	101
Total number of cases of albuminuria	118

Glycosuria, Sugar slight trace	1
" " trace	5
" " one plus	4
Total number with sugar	10
The average systolic blood pressure in cases of albuminuria (103) cases	130

BLOOD PRESSURE.

Average age	19 years
Special blood pressures taken	580
Average systolic pressure	125
Average diastolic pressure	71
Over 140 systolic pressure	60
Highest systolic blood pressure	170
Lowest systolic blood pressure	90
Highest diastolic blood pressure	100
Lowest diastolic blood pressure	350

BLOOD PRESSURE READINGS OF 588 MEN OF AVERAGE AGE 19 YEARS.

	Aver. S.B.P.	High.	Low.	Aver. D.B.P.	High.	Low.
Recumbent	126.4	170	88	70.7	100	50
Standing	126.7	180	85	72.8	100	40
Immediate	137.9	788	94	73	100	20
30 secs.	133.4	180	80	69.2	100	18
1 min.	129	170	72	70.3	105	16
2 mins.	127.3	178	72	69.2	96	16

The effect of exercise on blood pressure is to raise it in 95% and to lower it in 5%.

The exercise consists in lying in the prone position and raising oneself on arms ten times.

The effect of standing after recumbent posture is to raise the blood pressure in 60% and to lower it in 40%.

The average difference between systolic blood pressure and diastolic blood pressure.

		Greatest Difference.	Least Difference.
Recumbent	54.8	106 M.M.	22 M.M.
Standing	49.9		
Immediate	68		
30 secs.	61.4		
1 min.	57.7		
2 mins.	56.8		

The data thus gathered shows that some of our students have physical defects and disabilities of varying degree, and that they are therefore working under a handicap. The aim of the University Health Service is to lessen that handicap where possible, to promote the health and physical fitness of the students, and to teach how best to care for themselves and to be of service to others in their after life.

*Read at the Section of State Medicine, Academy of Medicine, Toronto, March 18th, 1923.

Psychoanalysis, a Contribution to the New Psychology

By J. W. Bridges,
Professor of Psychology, University of Toronto.

(*Continued from May number*)

Mental conflict is thus a conflict between original trends and moral habits; but, since these habits are motivated in part by gregariousness, it is reducible in part to a conflict between selfish or anti-social trends and the herd instinct. This account embraces the views of Freud, Jung, and Adler, but adds something more. Conflict may be as Freud supposed between perverse sexual trends and the social regulations of sexual behaviour. It may be as Adler suggests between the wish for power and the wish for security or between the ego instincts and the social proclivities. It may be in accordance with Jung between the progressive and the regressive trends of the libido. The former may be interpreted as the wish for power, wealth and fame, the latter as the desire for security, irresponsibility and dependence. But in addition to all this the conflict may be between the pugnacious propensities and the pacifistic ideals, or between any original trend and an antagonistic moral principle.

So long as the conflict persists in consciousness the subject remains in a state of anxiety. Anxiety, whether abnormal in intensity or within the limits of the normal, is symptomatic of a conflict in which the antagonistic forces are either completely or partly conscious. The outcome of the attempt to remove this conflict from consciousness may be any one of three diverse possibilities. First, the subject may be dominated by his instinctive non-social impulses. He fails to acquire the cultural morality of his social milieu. This may happen if these impulses are abnormally intense, if the gregarious instinct is unusually weak, or if the intelligence of the subject is much below par. The acquisition of a moral habit requires a certain minimum of intelligence. An individual who attempts to live out his original nature in a complex social organization must soon come into conflict with social regulations and his career is short lived. He is imprisoned for sexual offences, for murderous assault or for theft, or he is incarcerated in an institution for the feeble-minded or psychopathic.

Secondly, the subject may repress his original nature. This is due to an overdevelopment of the antagonistic social habits. He builds up a strong system of habits to defend himself against his original self. There thus appears in consciousness or in behaviour the very opposite of the original trend. The individual becomes artificial, affected, exacting, puritanical, prudish, and often neurotic. Original nature cannot be repressed with impunity. The repressed impulse manifests itself in various indirect forms. These indirect expressions together with the defending habits constitute the neurotic symptoms.

These defence mechanisms occur not only in character formation and in behaviour, but also in the realm of emotion. For example, an abnormal fear may be a defence against a repressed desire or it may be a means of attaining security against a supposed danger. To be sure the object of the fear may be trivial and on the face of it not a desired or a dangerous object. It is however, associated with some desired or supposedly dangerous object. It represents or is symbolical of the latter. Similarly an abnormal hate may be a defence against repressed love. Psychoanalysis aims to reveal the true object of the emotion and the real attitude of the patient. So it is in the case of other neurotic symptoms.

The repressed impulse may express itself through the mechanism of projection. This means that one's own tabooed or immoral trend is ascribed to someone else who becomes the object of censure or reproach. We are all familiar with the type of person who goes about condemning everyone else for the slightest departure from the moral code. He gratifies his own repressed desire by talking about its expression in other folks. This peculiar mechanism explains the attitude of persons who are severe and drastic in their condemnation of the criminal, and who believe in punishment for its own sake or as a compensation for crime. These persons have strong tendencies to do just what the criminal has done. These tendencies they repress and project upon the criminal thus avoiding self reproach which is a very painful emotion. They advocate a drastic punishment of the criminal in an abortive attempt to annihilate the undesirable impulses. In the suffering of the criminal they make a vicarious atonement for their own sins. Projection is also illustrated in the universal tendency to believe that the person you hate hates you, that the person you love loves you, that the person you have broken faith with is unfaithful to you, and so on.

Sometimes the repression is only partly successful. The emotional aspect of the repressed trend remains behind in conscious-

ness as a free "floating affect." This emotion may later become attached to some other idea resulting in various kinds of obsessions. This may be illustrated by the case of a person who is unable to achieve the object of his love. The specific desire for that object is repressed and may even be changed into hate; but the love is set free and may later be transferred to another person who in some respects represents the original first love. Since some form of repressed love is frequently at the root of neuroses it often happens in the course of treatment that the love of the patient is transferred to the physician who must then set it free and if possible re-direct it into normal channels.

The repressed trends as we have shown continue to manifest themselves and to motivate behaviour in various ways. Behaviour so motivated is however accounted for by the subject in other ways. He gives specious but spurious reasons for his behaviour. This is called rationalization. It is a sort of psychical camouflage. It conceals the real motive of behaviour. This may be illustrated by the case of the young man who maintains that he remains single for economic reasons. Inquiry may show that he has a very good salary and that his standard of living is not unusually high. The real cause of his single life might be revealed by psychoanalysis.

The third possible outcome of the conflict is the only real and satisfactory solution. The anti-social or immoral trend is not repressed, but it is so modified as to make it acceptable to society. The individual is thus able to live out his original trends and at the same time to adjust himself to the social demands. This is the so-called sublimation. It may be illustrated by reference to the instinct of pugnacity. This instinct cannot be expressed in its original form, for the subject would come into immediate conflict with the law. It should not be repressed, for the subject would then lack an important incentive to achievement. He would become a worthless milksop. Such a result may follow drastic punishment for pugnacious behaviour in childhood. The instinct should be expressed in a modified form. It may be sublimated successively into scientific boxing, games of rivalry, competition in school examinations, writing polemical articles, and scientific, political, or social achievements. Such modification of original nature and not its repression is the proper goal of education, whether in the home, the church or the school. This is the important contribution of psychoanalysis to mental hygiene. There is always danger in drastic punishment of the child for behaviour that is natural and for him without moral significance. In order to change the un-

desirable behaviour it should of course, be made unsatisfying or unpleasant to the child, but this can usually be done by appeal to the social instinct, that is to say, by disapproval. When punishment is necessary it should not be over severe, and should be supplemented by reward for the desirable behaviour.

On the other hand the child should not be pampered, spoon-fed, and over indulged with affection. Such treatment results in developing an over attachment to the parent and the home which greatly interferes with his future success, and permanently destroys the possibility of his later marital felicity. The slightest difficulty in life results in a flight from reality and a regression to the security and irresponsibility of childhood. Such an individual through no fault of his own drags at each remove from childhood the lengthening chain of the regressive tendency that binds him permanently to the past.

Neither should the child be unduly impressed with his own inferiority. Parents and teachers should strive for the golden mean in this respect. On the one hand the child should not be made the permanent focus of attention, but on the other hand he should be allowed ample opportunity to express his individuality. The child who is always made to feel his own insignificance like the child who is over indulged will not be able to face the world and fight his way in the best possible manner. Either he will succumb to his inferiority complex and enter the lists lacking the confidence and self assurance so necessary for success, or he will compensate for his inferiority by an exaggerated egoism and conceit which makes personal relations impossible and likewise spells defeat.

Psychoanalysis has called attention to the importance of the first few years of the child's life in moulding his character, in laying the foundations for his future mental stability or psychopathy, happiness or misery, success or failure, and in determining the general trend of his fate. It has emphasized certain things that should not be done, but it has left as a problem for the wise parent or educator to decide upon the best possible course in the individual case.

This does not mean that the individual's original nature can be disregarded. His sensory and motor capacities, his instinctive equipment, and especially his general intelligence are surely of great importance. In fact, general intelligence may be regarded as the *sine qua non* of success, but alone it does not assure success. It must be given an opportunity for development, and it must be reinforced by other qualities of the personality that are dependent

upon early environment. The writer believes that intelligence itself, like other original elements, may be repressed by the influence of the environment. How many people are living up to the limits of their possibilities in intelligence? How many persons really think for themselves? Potential intelligence is often repressed by the authority of a dominating educational system. The schools have much to answer for in this respect. The child is not trained to think for himself. He is forced to accept the teachers *ipse dixit*. The school system that does not instil into the child a wholesome disrespect for authority and a measure of dependence upon himself has failed in its greatest purpose, the making of an individual. The world will never be safe for democracy until the proper foundation has been laid in education. There must be not only education for democracy, but also a greater measure of democracy in education.

In addition to the application of psychoanalysis in the cure or prevention of the neuroses and to problems of education in the broader sense, it has been applied in a more theoretical way in the interpretation of dreams,wit, literature, mythology and even religion. These interesting questions we shall not touch upon here; but another problem of great social importance will be mentioned, the problem of delinquency. The writer is frequently asked such questions as why do some girls go wrong and why are some boys delinquent? In his opinion a greater psychological problem is why do some girls go right or why are not all boys delinquent. When we pause to think of the primitive, the savage elements in our nature handed down from a long line of animal ancestors and revealed by psychoanalytic studies, the wonder is that most people are able to modify these impulses in conformity to social demands. It bespeaks a strong original social trend and a capacity to learn—a general intelligence.

To go right means to adjust to the demands of a larger social environment. Individuals may fail to do this for three important reasons: (1) They may lack the intelligence necessary to modify their original behaviour, that is, to acquire social habits. These are the defective delinquents. In the first days of intelligence testing it was often maintained that most criminals, and especially most delinquent children were feeble minded. More recent studies show that this is certainly not the case. Only a small proportion of delinquents are mentally defective in the sense of lacking intelligence.

(2) Individuals may fail to adjust to the social order because their anti-social propensities, sexual, selfish, or pugnacious, are abnormally intense, or because the gregarious tendency is unusually weak. It is more difficult for them to acquire moral habits because the ordinary motives do not have the usual appeal. Such motives must somehow be reinforced. These are the hyper-emotional or emotionally unstable delinquents.

(3) Individuals may fail to adjust to the larger social demands because of counter factors in the immediate environment, especially in the home. Their selfish propensities may be exaggerated by over indulgent parents, or they may be over restricted and given no outlet for these impulses by puritanical but unwise parents. Or the parents themselves may be anti-social and the child merely acquires his parent's habits. Or the child may be forced out of the home by lack of sympathy and attention to acquire the habits of a gang on the street. There are, of course, pernicious influences in the schools and on the playgrounds. In this group we find many neurotic delinquents, but many also who are perfectly normal having merely acquired the habits of their immediate associates.

In conclusion, let me emphasize what may now be obvious, namely, that the most fundamental pre-requisite for good citizenship and for social service in the broadest sense is a thorough knowledge of human nature. Some one has said that the would-be saint should know the ways of the sinner. Psychoanalysis would agree, but would add that he may find the sinner in his own bosom; for if he would search himself down to the very foundations of his personality, he would find the potentialities of all possible crimes and perversions. Only the individual who does so know himself is fit for social service, for only such an individual can be tolerant yet just, and sympathetic, yet stern. Such an individual can take his place among the few ideal persons who number among their ranks not only the psychoanalysts, but certain artists and playwrights, who attain by a brilliant intuition that insight which the psychologist strives for through the longer way of scientific method.

The Socratic maxim, "know thyself," has now a deeper meaning; for this knowledge must extend beyond the limits of ordinary awareness. Such knowledge is power. Repression of impulses means loss of conscious control and lack of unity in the personality. If these disorderly forces are brought into consciousness they can be to a greater degree checked, modified, and directed towards a selected goal. This means a more completely integrated personality. In other words, repression with its consequent ignorance

and loss of control should be replaced by knowledge with its greater possibility of direction and sublimation, and also with its broader outlook, its greater tolerance, its more human attitude, in short, its super-morality. Such is the ideal personality that attains in some small degree the philosophical ideal of a view of the world *sub specie aeternitatis*. Such is the goal that only few have now attained. How shall we shape the future?

Social Background

Mental Defect as a Factor in Family Instability

MISS GORDON HAMILTON, *Charity Organization Society, New York City.*

PART II

THE simplest way to get ourselves clear about the feeble-minded is to start at the bottom and reconsider the familiar types and the commonly accepted method of treatment. At the bottom of the scale is the idiot with the mental age of three. The method of treatment is perfectly simple. He will be incapable of self-support and probably also of self-help. He may have to be fed and dressed. He needs what amounts to nursing care either at home, if the home is good, or in an institution. He will be a permanent care, but he will not be a mischief maker. The institutions hate to take this type as they require so much attendance, but probably their care costs less than in indirect ways for the borderline—at least the idiot is a one generation problem.

The treatment of the imbecile in a 3—7 is more complicated; the lower grades can be taught self-help either in an institution or at home and the higher grades can with patience be taught self-support. Many of them will not have children, anyway; many will be of the docile lethargic kind and can be fitted into routine jobs, like packing, or simple housework, or very simple factory work, or day-labour under supervision. There are unstable imbeciles who require special treatment, but for the most part, either the ungraded class with manual training, where the home is good, or institutional training for instability, or when the homes are bad, will take care of the problem nicely.

The moron becomes more a complicated puzzle. With his higher intelligence, his emotional capacity is apt to run parallel, and it is this emotional degree that makes him harder to adjust. The differential for a very large number is early intensive training and a reasonably good home. A certain per cent. will have to be segregated, but we cannot say how large a per cent.—this must

remain until we have made a full effort to deal with the problem through the schools, through housing faculties, through vocational opportunities, placement and general supervision. Few or no communities are ready to take forethought in this connection. Meanwhile, the problem heaped up upon us so with wretched homes both as the result and the cause of ingrowing failure, that many institutions will have to be built to relieve the community of those whom we are too late to help.

The "Borderline" unlike the imbecile who is apt to "stay put" as we say, with the mental age of 10, 11, 12, has the capacity of a boy of that age to get into mischief. Like the high-grade moron, he is not so queer that the gang teases him but he is excitable, suggestible, easily led. He is often well-developed physically, gets through school somehow, without notice, and his defectiveness shows not so much at his books, although he will be stupid at them, but in his home and community life. He will be poor in school but if your schools in Toronto are similar to ours in New York, he will repeat a few grades, or be shoved along by his teachers because the schools are too crowded to waste time over him, or because parents who don't understand the condition, make trouble if he is held back. He will be a year or two or sometimes three retarded, and if you ask about him you will be told that he's bright enough but he won't pay attention, and five times out of ten he will be a truant.

So much for school. At home he is clumsy and gets in the way, isn't good at errands, teases the little children, is hard to manage, develops little habits of lying and stealing or bad sex habits, or both. He may not, but this is the situation so familiar to case-workers.

In his social circle he is probably a gangster—at worst, he's the stool pigeon, the boy who holds the burglars' kit, the go-between in the drug traffic; he's the marginal worker—soon laid off—poor wages—irregular to the end; he marries a girl who is none too particular and gives his children the sort of home one can expect.

You have right now in one of your Canadian prisons a borderline boy from New York, and his brother and sister, both borderlines, will make a picture that needs no further enlarging. (Dougherty.)

What is the matter, then, with these borderline types and how, as case-workers, can we treat them—not by permanent custodial care surely, not by sterilization surely—what then?

The first answer is early recognition—recognition based on a real case work study of intellect, emotion, character, personality and environment.

The second answer is adjustment through the right sort of training—no schools have the equipment to-day to give much attention to this most troublesome type of case. There is no substitute.

The third is careful vocational placing, based on social study.

The fourth is supervision.

Even this doesn't answer the whole because just as some idiots and imbeciles and even morons are so badly equipped that they must have institutional care for long periods or for life, so the borderline may be so ill-equipped in character and emotion that he, too, must be segregated in an institution or colony for long periods of training and in extreme instances, for life.

Yet this is the person whom practically no judge will commit until the behaviour difficulty has become delinquency and the offenses have piled up into a lurid past. There is a real discrepancy here between the legal aspects of the case and its social needs.

Some schools, and clinics, and lawyers and doctors, as well as social workers, will not recognize the dangers of the higher type defective as they should. It is the clear duty of social workers here to study the problem and be able to offer evidence dependable, fair, conservative but deeply understanding. This is their service to the mental hygiene work.

Sir Thomas Browne says, "The unhappiness of our knowledge too nearly acquainteth us." As social workers we do not always play the constructive part, we should because we are too nearly acquainted. Yet this strategic position can be used for real progress in case work with borderline types.

News Notes

The Second Congress of French-speaking Dermatologists and Syphilographers will be held at Strasbourg on the 25th, 26th and 27th of July, 1923, as part of the Pasteur Centenary Exhibition, which is being held at Strasbourg from June to October, 1923.

This Congress will be under the patronage of the French Society of Dermatology and Syphilology and of the committee of organization of the Association of French-speaking Dermatologists and Syphilographers. Those who are eligible for membership are:

(a) The members of National Societies of Dermatology and Syphilology.

(b) Physicians who are interested in the question of skin and syphilis, and who are acceptable to the committee of organization.

The meetings will be held at the Institute of Hygiene and Bacteriology and at the skin clinic from 9 a.m. to 2 p.m.

Cases will be presented, papers will be read and discussions of reports on the following questions will be held:

1. Sensitization and desensitization in skin diseases; reported by Dr. Ravaut of Paris and Professor Spillmann of Nancy.

2. Noevo-carcinomata; reported by Professor Masson of Strasbourg and Professor Bruno Bloch of Zurich.

3. Treatment of Syphilis in the pre-generalization period; reported by Dr. Quevrat of Paris and Professor Malvoz of Liège.

4. The value of the different routes in the treatment of Syphilis; reported by Dr. Milian of Paris and Dr. Bodin of Rennes.

The president of the committee of organization is Professor Pautrier, 2 St. Nicolas quai, Strasbourg.

The Congress of Dermatology and Syphilology will be preceded by the Cancer Congress, which will take place Monday and Tuesday, the 23rd and 24th of July, and will be followed by a Conference on Leprosy, on Saturday, the 28th, Monday, the 30th, and Tuesday, the 31st.

Further information concerning this Congress may be had from Dr. Gustave Archambault, 616 Rue St. Denis, Montreal, Que.

A new clinic for the treatment of Venereal Diseases has been opened at Peterboro, Ontario, in connection with the branch laboratory of the Provincial Board of Health in that city.

The typhoid fever epidemic in Cochrane, Ontario, has practically subsided. Very few new cases have developed this month.

Mr. H. M. Lancaster, B.A.Sc., Director of Laboratories in the Provincial Board of Health, was honoured recently by the presentation on behalf of the staff with a beautiful reading lamp. Mr. Lancaster is taking charge of the Division of Food and Drugs of the Federal Department of Health, Ottawa, and leaves the Board after twelve years' service, and with the best wishes of the Board and staff. Dr. Charles M. Anderson, C.P.H., the former Provincial Bacteriologist, has been appointed to succeed Mr. Lancaster as Director of Laboratories.

The Division of Vital Statistics, Registrar-General's Department, has secured a number of birth certificates of the British Royal Family and other important personalities. There are also some marriage and death certificates of royalty. These will be on display at the Canadian National Exhibition this fall.

The Division of Industrial Hygiene, Provincial Board of Health, Ontario, has completed for publication a compilation of literature on lead poisoning under the headings:

(a) Lead Processes.
(b) Diagnosis.
(c) Prevention, etc.

This should be of considerable assistance to physicians connected with the lead industries through the Province, on account of the fact that lead as a hazard to health is used in about 150 different trades.

An address of appreciation from the members of the Provincial Board of Health of Ontario was recently read to Dr. J. W. S. McCullough, Chief Officer of Health. On this happy occasion he was also the recipient of a handsome English club bag.

Over 800 cases of typhoid fever have occurred in Cochrane during the past three months. As the population of Cochrane is 3,400, this means that one-fourth of the people are either sick or slowly recovering.

The municipality of Cochrane established an emergency typhoid hospital of 80 beds, and secured medical and nursing care for the poorer citizens. Cochrane helped herself.

The Provincial Board of Health sent its medical and sanitary officers to advise and assist the Local Board of Health with regard to the necessary health measures, while a staff of Public Health Nurses investigated conditions and helped the people to avoid the disease. The Board also made a grant of $20,000 to assist the municipality in paying for its medical and nursing service.

The Red Cross of Ontario appeals to the people of Ontario for $75,000.00, because this second emergency, following so closely on the Haileybury disaster, has made an appeal necessary. The Ontario Red Cross is still carrying a ten-bed emergency hospital at Haileybury and a six-bed emergency hospital at Englehart in the fire area. For this work no appeal was made.

Contributions should be made payable to the Hon. Treasurer, Ontario Red Cross, 410 Sherbourne Street, Toronto.

The Provincial Board of Health of Ontario

COMMUNICABLE DISEASES REPORTED FOR THE PROVINCE FOR THE MONTH OF MAY, 1923.

COMPARATIVE TABLE.

Diseases	1923 Cases	1923 Deaths	1922 Cases	1922 Deaths
Smallpox	17	0	88	0
Scarlet Fever	395	7	219	5
Diphtheria	165	14	190	16
Measles	2,359	14	2,161	10
Whooping Cough	142	16	119	11
Typhoid	89	24	23	6
Tuberculosis	221	118	200	122
Infantile Paralysis	—	—	—	—
Cerebro-Spinal-Meningitis	9	8	4	4
Influenza	—	47	—	—
Influenzal Pneumonia	—	12	—	118
Pneumonia	—	250	—	245
Syphilis	99	—	104	—
Gonorrhoea	209	—	143	—
Chancroid	6	—	3	—

Book Reviews

"Nutrition of Mother and Child." C. Ulysses Moore, M.D.M.Sc. (Ped.) $2.00. J. B. Lippincott Company. 201 Unity Building, Montreal. First Edition.

The title fails to give a correct idea of the thoroughness with which the subject is handled. It is the first publication covering clearly the relationship of the mother's diet to the welfare of the child, besides setting forth in detail the latest ideas about breast-feeding technique.

The first few chapters deal with the subject of vitamins; their importance in the mother's diet and the diseases in the child caused by their absence from the child's diet. The author then passes on to take up the secretion of breast milk and the influences causing an increase or the decrease of the same. Manual expression of breast milk is well described and illustrated. That difficult problem, the handling of the premature infant, is next dealt with. The last part of the book deals with the diet of the child from the time it is weaned until it is two years of age.

The book is small, containing about 250 pages, but gives concise information without a mass of useless discussion. The illustrations are unique and original.

Nursing and Nursing Education in the United States. The report of the Committee for the Study of Nursing Education. The MacMillan Company, New York. 1923.

For all who are interested in nursing and the education of the nurse, the appearance of this volume is of very great interest, and it will be of far-reaching importance, if all who should be informed upon this subject could be persuaded to give the book serious study.

The story of the production of the report is interesting. The committee in whose name it appears was appointed by the Rockefeller Foundation in January, 1919, "to conduct a study of the proper training of public health nurses." It was not long before the committee discovered that "the entire problem of nursing and of nursing education . . . formed one essential whole and must be so considered if sound conclusions were to be attained." Therefore, in February, 1920, the Foundation requested that the scope of the inquiry be broadened to include a survey of the whole field of nursing and nursing education, beginning with the hospital training school and "on the basis of a study of function to establish service for which there appears to be a vital social need."

The book opens with an introductory chapter containing the

official report of the findings of the Committee, which report embraces ten conclusions or recommendations. These conclusions apply to nursing as a career and the effort that should be made to attract the right women into it; the necessityfor upholding the highest of our present standards in nursing; present conditions in training schools and the need for better organization there; the special training that should be available for all superintendents, supervisors, instructors, and public health nurses; the need for a subsidiary type of nursing service, and the training for it; the need for university schools of nursing, and as an absolute prerequisite, the need of securing funds for the endowment of nursing education.

After this report of the committee, comes the report of the survey which occupies over five hundred pages, and gives, with a great deal of detail, a vivid picture of the work which is being done to-day by the various groups of nurses in the United States, and of the training, good and bad, which is being provided for these nurses; the survey of training includes the hospital school, the university undergraduate school, and the university postgraduate schools.

The names which appear on the committee include six nurses, ten physicians, one Doctor of Public Health, and three laywomen. Many of these people have an international reputation, and a report which is published over their signatures should receive a very respectful consideration.

"Nursery Guide for Mothers and Nurses. By Louis W. Sauer, M.D. Cloth. $1.75. Pp. 188. St. Louis: C. V. Mosby Co., 1923.

This little vade mecum, written for mothers and nurses, gives in clear, concise form all essential details in the care and feeding of infants. It tells how to care for the infant in health and in disease. The illustrations are attractive and the subject matter well arranged.

"Practical Talks on the Care of Children," by Mary E. Bayley, R.N. Cloth, $3.50. Pp. 344. New York. E. P. Dutton and Company, 1922.

This is a valuable book for mothers. It contains practical talks and directions for the prospective and the actual mother. It discusses in detail and in plain language the clothing, food, and other things pertaining to the health of the child and includes a chapter on factors influencing the nervous health of the child and a statement concerning the prevention of the ordinary diseases of childhood before and after the school age.

Editorial

DR. J. A. MacDONALD.

IN the passing of Dr. J. A. MacDonald, who died shortly before THE JOURNAL went to press, Canada has lost a man whom she could ill afford to lose. Suffering from ill health and withdrawn from active participation in public affairs during the last few years, Dr. MacDonald in his prime was not only one of the most outstanding figures of his time, but a statesman and an idealist whose positive leadership was of such a character that it will never be forgotten by those of his own time. Aside from his actual achievements the very memory of his powerful personality and the tremendous energy and enthusiasm with which he flung himself into every cause which he considered righteous should be sufficient to prove a lasting inspiration to every Canadian who came within the scope of his influence.

The characteristics of the man were evident in all of the various fields in which he exercised his untiring energy. As a preacher, as a brilliant editorial writer, as a public speaker applauded and admired in all parts of the continent, constantly the "law of the world's good will" was the dominating idea in his mind—a law irrefutable and unbreakable even as the law of gravity itself. Nations or individuals who attempted to avoid it were themselves broken even as must be one who attempts to break a law of the Almighty. This was the impelling impulse in an almost successful attempt to bring about reciprocity, in bitter attacks on unmoral offenders in political life, in brilliant and earnest addresses at gatherings to further the ends of international peace.

All efforts for the public weal have some relation to public health even as it is now understood and in this sense Dr. MacDonald was always a public health enthusiast. But even considering public health in its more limited sense he did yeoman service. One recalls, for example, a conference held in Toronto in 1917 at which the seriousness of venereal diseases was discussed and the duty of newspaper editors stressed. Dr. MacDonald's brief and dramatic contribution was this: "Gentlemen, some of you have accused *The Globe* of holding up progress by refusing to print the

words, "venereal disease" in its editorial columns. That accusation is true, but by the Eternal God, it will never be true again. The first editorial will appear in *The Globe* to-morrow morning." The editorial resulting, probably the first on the subject to appear in a Canadian newspaper, ushered in a series of like character calling the attention of the people to the need for action. It provided a needed stimulus which had much to do with subsequent governmental action culminating with specific legislation and the working out of a Dominion Social Hygiene programme.

This incident is mentioned as but one in a life full of generous impulses and vigorous public-spirited action. One wishes for a like spirit for all editors and all newspapers—less of an eye to the main chance, less cheap politics, less materialism—fewer of the faults that curse the body politic generally and make the greatness of the great who leave one more apparent. Viewing the world as it is one feels with Horatio, "Now cracks a noble heart" . . . . We shall not look upon his like again.

IT IS TIME TO ACT.

IT has been a matter of amazement to many thinking citizens who are aware of the facts that there is so little supervision of the type of literature sold in newstands throughout Canada. At the present moment, in all parts of the country there are magazines on sale, of a sort, which, a few years ago would not have been tolerated. There appears to be little sign of action on the part of either the government or anyone else.

As it is likely that the general public are not aware of just how serious the situation is, the Public Health Journal would advise its readers to canvass the situation themselves. A casual visit to the nearest newstand will reveal a condition of affairs which is more than sufficient reason for the writing of this editorial.

Ten years ago one would have found that the demands of the reading public were adequately met by a supply of such high grade periodicals, as "Scribner's," "Harper's", "Atlantic Monthly", "Century", "Saturday Evening Post" and other publications of a similar character. To-day, in the forefront, are magazines under a variety of names of which "Snappy Stories", "Telling Tales", "Saucy Stories" are examples. These publications are generally not only filled with drivel, but they also include stories of such a

definitely objectionable character that they are a menace to the moral well being of the country.

There has recently come to the attention of this journal a copy of "Saucy Stories." A perusal of this filth purveying medium is enough to rouse the wrath of any citizen who cares anything for the decent living of the people.

It is filled with stories of a dangerous character, most of them relating incidents, which not only have to do with sex, but which are told in such a way and from such an angle as to make any sensible reader conclude that the only safe method by which one can dispose of such muck, is to ban it from the mails altogether. Ones determination will probably not be lessened in the least by the information that these magazines are commonly snapped up with avidity by young school girls. A fine school for moral training they provide!

Some magazines have, of course, kept up their old time high standards and it is still possible to buy first rate fiction. It is worthy of note, however, that, on the whole, the last ten years have been a period of deterioration for many magazines upon which one used to feel that full reliance could be placed. The outstanding examples mentioned here are perhaps the worst because they have no redeeming features, nor have ever had. If, however, it were possible to do some cleaning up, starting with these most glaring offenders, it would be with a light heart that one would proceed to deal with some of the better class offenders whose main appeal seems to be through suggestiveness appearing in both illustrations and reading matter.

The Public Health Journal presumes that some of its subscribers read its editorial dicta and pay some attention to them. An appeal is made herewith to readers and subscribers alike to help in a crusade against the literary scavengers and scandal mongers whose publications pollute the atmosphere of our newstands and the minds of our young people. The attention of the Canadian Social Hygiene Council, whose duty it is to pay some heed to an appeal of this sort is hereby directed to the matter. Correspondence and suggestions on the part of anyone interested are invited.

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Child Hygiene

Department of Public Health, Toronto

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THE meaning of words changes as the subject for which they stand broadens or narrows its scope. So it is with the term "child welfare," which a few years ago had a limited meaning, but now stands for that vast field of work which embraces all that is being done for the welfare of the child, whether through the educational system, juvenile courts, child caring institutions, children's hospitals, or preventive child health work.

In order that there may be less confusion the term "child hygiene" has been given to the preventive medicine or health aspect of child welfare work. This article is written to describe the child hygiene work of the Department of Public Health, Toronto.

One of the problems that faced the health authorities of Toronto in 1914 was briefly this, that out of 13,949 babies, reported as born alive in Toronto, 1,556 died before completing their first year of life. These numerous deaths, serious as they were in themselves, were indicators of an alarming amount of sickness amongst infants, which sickness in its crippling results on the survivors is more serious than in the deaths it causes. In order that these infants might have a reasonable chance to develop into healthy happy children it was imperative that steps be taken to protect them from sickness with its damaging results. What has been accomplished is illustrated to some extent by a similar statement for the year 1922. With 13,103 live births reported, only 984 under one year died.

The Department organization was ready, the work was started, and has gradually developed and grown to its present proportions. It is not intended here to record the history of this development, but to state the present organization that is dealing with the prob-

lem of child hygiene, and to briefly summarize the results of this effort.

The child's life divides itself into three parts, and from this natural division we speak of "the school child," "the pre-school child," "the infant." The easiest group to deal with is that of the school child. Our modern educational system brings together all children of school age, and thus presents us an organized unit for our health work.

Health work in the school was originally undertaken as a part of the effort to control the communicable diseases and so to minimize the amount of time lost from school due to these diseases. It was soon appreciated that there was an opportunity regularly to examine the school children in order to find if they had any physical defects, and if so to point out to the parents the necessity of having such defects corrected, in order that the child be given its fair and even chance of a proper physical development. The next step in the progress of the school health service, and the most important, was the introduction of health teaching; which is the instruction of the child in the simple but all important health habits. For personal hygiene must be carried out by the individual. The community can supply safe water and milk, but the individual must wash his own hands and clean his own teeth. It is just as easy to develop proper as improper habits, and if the child is to care for its physical body it must be taught to do so. This type of teaching is carried on by the public health nurse at the time of her classroom inspections, which are carried out monthly in the senior classes and half monthly in the junior. A copy of "Health Talks," with a brief synopsis of the points to be emphasized under the following headings, is supplied her:

Personal cleanliness.
Diet.
Sleep and Posture.
Fresh Air, Sunshine and Recreation.
How to Prevent the Spreading of Communicable Diseases.

A special educational effort is made in the courses given by the public health nurse to Jr. IV girls in mothercraft which are called "Junior Health League Classes." This course of eight lessons is voluntary. The subjects of each lesson are:

Growth and Development of the Baby.
The Nursery.
Bathing and Value of Water.
Clothing.

Signs of Healthy Baby.

Feeding the Baby.

A certificate and badge is given to each girl who passes the examination held at the end of the course. In 1922, 1,800 girls of 80 classes received their certificates and badges.

At the time of the complete physical examination of the child by the school medical officer of which 23,617 were made in 1922, the mother is invited to be present, and in the majority of cases the invitation is accepted. This gives an excellent opportunity for the medical officer to talk to both mother and child concerning the proper care of the child, as to hours of sleep, use of milk and such other important points. The parent, whether present or not, is notified in writing of any defects found and asked to consult the family physician.

Each mother is given a copy of a Department publication which gives the proper diet for school children and also lists the important points in the care of children's health. These are what we call the "Health Rules for School Children." These complete physical examinations are also a step in teaching the population to look upon routine medical examination for the early detection of disease as the proper and natural thing.

The dental service provides for the inspection of the teeth of all school children once a year, any dental defect found is notified to the parents. At the same time the examining dentist talks to the children concerning the care of the teeth. In the year 1922, 65,742 children were examined, and 37,179 were found to have dental defects. Dental clinics are carried on in 28 schools, where those requesting it are given dental care. Certain special centres, of which there are five, do extraction work only. This actual reparative work gives the child the idea of the necessity for dental work and makes them look for it in later years. In 1922, 32,285 treatments were given in the dental clinics, 18,120 extractions and 21,509 had their dental work completed.

In connection with the schools there is certain special work done. Medical and nursing service is provided for the various auxiliary classes. For the sight saving class, this means the selection of cases and advising as to their work, and a supervision of the same. These classes are carried on so that this group may be educated without further damage to already weakened eyes.

The medical service also recommends the children for the open air classes and the forest schools. For these classes are selected children who are physically subnormal, many are tuberculosis con-

tacts, some are cases of chorea. The routine of these classes with their allowance of milk, long rest periods and life in the open air gives these selected children their opportunity for health.

The staff of medical services includes a psychiatrist who has two public health nurses and a secretary detailed to him. He carries on mental examinations of the school children. His examinations show that between one and two per cent. of our school children are mentally defective. To meet this need, 39 auxiliary classes of the type known as "industrial classes" have been established. The psychiatrist recommends the children who should be in these classes and with his staff aids in their supervision, and advises as to the disposal of the cases.

So we have in our schools, medical, dental, and nursing services which aim to keep the well child well, to provide special care for those needing it, and most important of all, to educate the child to care for its physical health by the teaching of proper health habits.

In connection with the school work the school medical officers made 2,105 visits to the home. Most of these were to make a diagnosis on cases excluded from school on the advice of the school nurse as suspect cases of communicable diseases, for in all such cases the school medical officer visits the day of exclusion to make a diagnosis.

The public health nurses made 22,531 home visits in connection with school work. A large part of these are made to urge upon the parent the necessity of securing medical attention for the child found to have defects. During the year 1922, 23,671 school children were examined and 7,576 found to have defects; 10,223 defects were terminated, that is, the parent placed the child under medical supervision.

When a child is born the notification from parent and physician goes to the city clerk who is the assistant registrar for the district, and through his courtesy the Department of Public Health knows of the birth registrations. To the parents of every child born in Toronto goes a copy of a book, "The Care of the Infant and Young Child," which on account of its cover has become known as the "Red Book." This book is a storehouse of information for the mother, and has been carefully compiled and is approved by the best authorities. It is the first step in the education of the young and ofttimes ignorant mother, for our system of education has left largely to chance that women be instructed in this most important duty in life they must take.

To each of the eight district officers goes the report from central office of the births for the district.

The district organization is briefly this:

There is a full time medical officer in each district. We have a generalized public health nursing service with a nursing superintendent in charge of each district, each nurse on her staff has a section of the district in which she supplies all the public health nursing service. There is a Director of Public Health Nursing in charge of the division, and on her staff she has a group of supervisors who are responsible to her for the special work that is given them, such as the supervision of school nursing. The dental assistants, of whom there is one for each dental clinic, are under the direction of the district nursing superintendent.

The individual nurse decides as to whether or not she will call at the home of the new baby. In the majority of cases such a call is made. The object of such calls is to find the home where instruction is needed. In many cases the mother is entirely ignorant and needs instruction and demonstration concerning things that we are apt to think a woman knows by intuition, such as how to bathe a baby, how to dress it, all simple if you know how, but if not a real difficulty; 8,974 such visits were made last year to the 13,103 children born.

The most important point in infant work is the effort to place before the mothers the importance and necessity of breast feeding all babies. The mother who deprives her child of this natural food is the worst kind of a thief, for she steals from the baby something that cannot be replaced by any modification of cow's milk or prepared food. The artificially fed infant has not an equal chance as our own and other observations have shown. Of the children that died in Toronto during the summer of 1922 before their first birthday, after surviving the first month only 19% were breast fed and 81% artificially fed. This shows the advantage the naturally fed child has, and which every child should be given. One of the most important pieces of work the public health nurse does is to encourage the mother in regards to breast feeding, particularly at the time she first gets up and the quantity is temporarily diminished, and when friends and neighbours tell of the advantage of this or that food. It is then that the firm, guiding hand of someone, and that someone is often the public health nurse, is needed to set the mother right and help her to do her duty.

The Department conducts 23 child welfare clinics. These clinics are scattered over the city, and exist for the purpose of keeping

the well baby well. The infants are examined by the physician in charge to detect any physical defects, and if such are found to direct the parent to take the child to the family physician for medical treatment. The clinic does not treat. The mother is instructed by the physician and nurse as to the care of her child, the importance of breat feeding is strongly emphasized, and when the infant is weaned the mother is told as to how she should feed her growing child, the necessity of the child having a sufficient amount of cow's milk, and how vegetables and other solids are to be gradually added to the diet.

The mothers are encouraged to return regularly to have the child weighed, a card being given the mother on which the weight is recorded. The public health nurse talks to the mother at each visit, advising her and answering the questions that mothers always wish to ask. The doctor is only seen after the first examination if the child is not progressing properly, or if the mother requests it. Where children are under the supervision of a private physician, the clinic physician does not see such cases. Last year we had 7,509 children attending the clinics. The total attendance was 45,360, and the number of physicians' consultations, 14,328.

There is an organized group of voluntary workers who help in the child welfare clinics doing the clerical work, so freeing the public health nurse for her real work of teaching the mother.

What is hoped is that these children will continue to attend until they reach school age, but once they have passed the real baby stage the mothers do not seem to feel that there is the same need, and it is so much more difficult to have the pre-school child brought every six months, which would be sufficient, than the infant every month.

This does not mean that the pre-school child is entirely neglected by any means. Under the generalized public health nursing system the nurse visits in the home. During 1922, 148,986 home visits were made. No matter why she visits the home, she takes into consideration all the health needs of the home, which, of course, includes the pre-school child. Her health teaching in the home as to hours of rest, fresh air, proper food, covers the whole family, and the infant work and school work directly and indirectly bear upon the pre-school group of children.

In our work for children the most important thing is to secure breast feeding. The next point in importance is the securing of a safe milk supply. All the milk delivered in Toronto is of that standard, safe, and is so because of a system of farm inspection which aims at securing the cleanest and purest milk we can from the 3,500

farms that send milk to Toronto and are spread over an area reaching from Kingston on the east to Goderich on the west and New Lowell on the north. When the milk reaches the city it is all pasteurzed, under the supervision of the Department of Public Health in licensed dairies, then placed in sterilized glass bottles and capped. As stated, this provision of a safe milk is essential in the interests of the chldren, and absolutely necessary for our pre-school children.

The dental needs of the pre-school child are met by having certain of the school dental clinics give their time on Friday afternoon to these children.

The importance of childhood infections on the adult is recognized, and that the communicable diseases play a large part in damaging the man power of the nation, so it is important that communicable diseases be controlled. The Division of Laboratories offers excellent facilities to the physicians, providing laboratory assistance in the diagnosis of such infectious dseases where the laboratory can assist. The outfits for taking specimens are distributed at 59 culture station which are scattered all over the city. The laboratories are open every day, including Sundays and holidays, and prompt reports are furnished to the physicians sendng in specimens. The various biological products are distributed through this division. Diphtheria antitoxin is stocked at the culture stations, the other products at the City Hall and the different general hospitals. The Provincial Board of Health supplies the material and the Local Board pays the cost of the syringe of the products put up in syringe form. So the diagnostic work and the biological products are absolutely free. This is an important point when we realize the vital urgency of early diagnosis and prompt administration of antitoxin in such a disease as diphtheria.

The Division of Quarantine receives the physicians' reports of cases, quarantines the homes in which infection exists, placarding certain diseases, instructs the people as to the control of the spread of the infection in the home by word of mouth and by printed instruction, and then visits to see that quarantine is properly kept. When the period of quarantine is over the people are instructed as to proper cleansing of the home and fumigation is carried out by the Department in cases of diphtheria, scarlet fever and smallpox.

The school medical and nursing services are always on the lookout for infectious diseases and many mild and what would otherwise be unrecognized or missed cases are picked out by them in the schools and in the home. The quarantine inspectors are trained to

seek the source of infection in each case and to watch any known contacts.

The Isolation Hospital provides accommodation for 110 diphtheria cases, 140 scarlet fever, 24 smallpox, 16 measles. There are always certain cases which need to be hospitalized, being in rooming houses or hotels, large family with no facilities for home isolation, family living over a food store and such like cases. In 1922 the hospital cared for 1,625 cases, giving 47,616 days of hospital care. In spite of the fact that the hospital naturally gets the more serious cases the hospital death rate is no higher than the general rate, even including those dying within twenty-four hours after admission.

In connection with the Isolation Hospital an ambulance service is maintained for moving patients to the hospital.

At the City Hall each day a free smallpox vaccination centre is open. In 1922, 944 vaccinations were done here. In connection with immunization work, clinics are conducted at three centres for Shick testing and administration of the diphtheria toxin-antitoxin mxture.

Insofar as we can improve the environment of the people this work is carried on by Divisions of Sanitation, Housing, Plumbing and Drainage, and they have their effect in bringing better living conditions to our children.

Under the law governing maternity homes and baby boarding homes, it is required that any person taking a child under three years of age for remuneration must be licensed by the Medical Officer of Health. Before such a license is granted the home is inspected, and the foster mother interviewed and then, if passed as satisfactory, is kept under supervision. In 1922, 140 applications were received, 90 licenses were granted, and 4,567 visits made. It being appreciated that children do so much better in a foster home than in an institution, this work is rapidly growing, and so it is very important to secure homes of the proper high standard.

All maternity homes, other than private hospital, are licensed by the Medical Officer of Health. Before such is given the home is inspected by a public health nurse and a physician of the Department. It is then kept under supervision. In 1922 there were 5 maternity homes licensed, 3 of which were refused license, and 421 visits made. There are at the present time 15 maternity homes licensed by this department.

As previously explained the generalized system means that each nurse does all the public health nursing work for a certain small section of the city. There is one group to whom this does

not apply, that is the group which carry on the hospital social service work for all but one of the general hospitals of the city, also the Hospital for Sick Children and Isolation Hospital. This group of 12 spend all their time in the hospital using the field staff as the home visitors to whom they report, and from whom they receive reports. In Toronto we are fortunate in having such an institution as the Hospital for Sick Children which is the centre for pediatrics of the Province. The Department is linked to it as the chief of the medical services of the Hospital for Sick Children is also Director of Child Welfare Clinics and also in charge of pediatrics for the University of Toronto. A report on home conditions is furnished by the field staff on all cases admitted to the hospital, and in turn the field staff are notified of the discharge of all patients. This latter is most important in connection with feeding cases. When the child is discharged sufficient prepared food is supplied for one day. This gives the nurse in the district time to call and explain to the mother the proper preparation of the food prescribed by the hospital, and this, of course, brings the case to her attention and she then keeps it under supervision as long as is necessary. The same is done for private physicians upon request.

At the Hospital for Sick Children are conducted the clinics for treatment of children suffering from venereal disease. The gonorrhoeal vaginitis cases requiring hospital care are sent to the Toronto General Hospital under arrangement with that hospital. The clinics are conducted under an agreement between the hospital and the Provincial Board of Health, the Local Board supplying the public health nurse for the social service work in connection with the clinics. The general machinery of the Department as authorized under the Venereal Disease Prevention Act is used to force examination and treatment when necessary.

The importance of protecting children from tuberculosis infection is appreciated by everyone. As an aid to this the Department asks permission of all physicians reporting cases to visit in the home so as to assist in teaching the patient how to care for himelf and protect others, to arrange for sanatarium care, to see that provision is made for the care of dependents if the bread winner is the one incapacitated, and such like things. Every effort is made to have all exposed examined to discover any early cases of infection, this particularly in regards to children. All school children known to be contacts are kept under special observation in school, they are recommended for open air and forest schools if not doing well. For the younger children the Preventorium furnishes accommodation

for 89 where children with poor home conditions are taken to put them in good physical condition. Sanatarium accommodation is available for cases of tuberculosis.

The clinics at the Hospital for Sick Children and Gage Institute provide facilities for the examination of children, and the associate voluntary agencies, Heather Club and Samaritan Club aid definitely in the care of this group of children, particularly the contacts.

Summer camps are conducted most successfully under various auspices, giving the children two weeks or more in the country. The Department furnishes a medical examination for all going, this with the object of helping to overcome the introduction of infection into the camps. In 1922, 5,838 children were examined who were given such an outing.

There is one other real problem in child hygiene, and it is briefly this, that a tremendous number of infants are bord dead—"still born" is the official term—and a very large number die in the first hours or days of their lives. Figures do not well express this personal and national loss, but they give some understanding of a condition that exists and up to the present has shown no improvement.

Year.	St. Births. Regis. as Deaths.	Live Births Reported.	Deaths Under 1 Week.	Deaths Under 1 Month.	Deaths Under 1 Year.
1922	571	13,103	360	489	984
1921	610	13,985	366	553	1,208
1920	675	13,661	402	614	1,430
1919	553	11,294	351	519	1,143
1918	521	11,779	362	541	1,238
1917	540	12,110	331	505	1,112
1916	632	12,498	394	567	1,349
1915	631	12,806	402	582	1,374
1914	687	13,949	408	651	1,557

There is no use in stating a problem to the public unless there is a remedy to offer, and this problem is stated because there is a remedy. It is true, that if every expectant mother realized the necessity of receiving proper medical supervision during the time of her pregnancy, or prenatal care as we call it, and was prepared to carry out the simple rules of personal hygiene in which she will be instructed, many of these deaths will be prevented. In other words, it is necessary to teach our mothers to seek and receive proper prenatal care. As a Departmnt we are doing a share of

this teaching. In the various general hospitals are conducted clinics for this purpose, and the public health nurses of the hospital social service group attend these clinics, and supply the link between the home and the clinic. Further, to meet the need created by distances and the fact that some women do not like a hospital, the Department have established four clinics which are called Neighbourhood Prenatal Clinics. The physician who is to attend at the birth is informed of the results of the examination and the mother is at once referred to him if any condition arises that calls for active medical attention. In 1922 these neighbourhood clinics had 170 women attend. The hope is that these clinics will act as centres of education and spread to the women the truth of the necessity of proper prenatal care.

A close co-operation exists with the various social agencies of the city, and social problems found in the home, school or hospital are referred through the proper channels to the agency which handles that particular type of social problem.

So, from prenatal, infant, pre-school and school hygiene efforts, we hope to bring health and happiness to more people, and to increase the nation's wealth by improving its greatest asset, its children.

Some Recent Aspects of Public Health Administration

By Henry F. Vaughan, D.P.H., *Commissioner of Health, Detroit, Michigan.*

We are all familiar with the evolution of public health work during the past century, from the period when emphasis was laid only upon sanitation, upon man's environment and his contact with the inanimate through the period of quarantine enforcement, the application of the strong arm of the law, into the modern movement of health education. One needs only to read the masterly works of John Simon and his co-workers to comprehend the problems which confronted the early English sanitarians who, unarmed with the discoveries of modern bacteriology, taught that environment was the great determining factor in health. Much was accomplished in those days toward the reduction of the prevalence of such diseases as typhoid fever, cholera and other distressing ailments transmitted by means of a foul soil, a contaminated water supply or an inadequate system of sewerage, but the researches of Villeman, Pasteur and Koch soon taught us that it was the individual himself, not his environment, who is the carrier of the seeds of infection. Our viewpoint has greatly changed and we have come more and more to realize that public health is dependent upon individual health and personal hygiene.

The medical officer of health of to-day has a distinct duty and function to perform in seeing that all opportunities at his command are capitalized to bring the people face to face with the facts which science has uncovered and with which we can most assuredly prolong human life and produce a lower death rate. The results of the past are most startling, and the future holds even greater things in store for us. In one sense the death rate of a community is an index of the intelligence of those individuals who constitute the group.

For fifty years we have been fighting tuberculosis with education, and during that period the death rate has been more than cut in half. It is those communit ęs in which the most persistent ef-

*Read at the annual meeting of the Ontario Health Officers' Association, May 21st, 1923.

fort has been made to teach the laity the dangers of this disease and its method and spread, that have reaped the benefits of the lowest death rate. Michigan, with the exception of the sparsely settled State of Utah, has enjoyed a lower death rate from tuberculosis than any other State in the United States. Is this due to some climatic influence resulting from our location in the Great Lakes basin? If this were so, the same factor would influence the death rate in other states and provinces such as Wisconsin, Illinois and Ontario, and it does not. Even before Koch discovered the tubercle bacillus, based upon the experiments of the French scientist, Villeman, showing the transmissability of tuberculosis in animals, the Michigan State Board of Health instituted a movement to educate the people on the subject of tuberculosis prevention. A primer was prepared and introduced as a text-book in all high school physiology classes, with the result that the native Michigander received his instruction earlier than the citizen of any other state. Thus does the death rate serve as an ndex of the intelligence of the community.

Had the health officer of Detroit predicted in 1900 that by 1922 he would be saving the lives of Detroiters at the rate of 5,000 annually, he would most assuredly have been declared a faker or charlatan—a fanciful dreamer of things unheard of. However, such are the facts. Had our citizens continued to die in 1922 at the same rate of death that existed in 1900, we should have buried 5,000 more people in 1922. The economic saving to the community is so vast that figures but inadequately express it, and the benefit to the individual can be appreciated only by those who have suffered the bereavement of a dear friend. I report for your consideration the figures for Detroit, since they are those most familiar to me, but proportionate results have been obtained in every community that has developed health education. The results for Toronto should be even more startling, for you have been one of the very pioneers. I know of no other city which has progressed further in the development and utilization of the most promising educational aid—the public health nurse. As friend and advisor to the expectant mother, as an aid to the pediatrician in prescribing for the baby, as an influence in developing suitable health habits in the child—she has assisted in obtaining this remarkable saving in human life and happiness.

As shown statistically by Eugene Lyman Fisk in his new book, "Health Building and Life Extension," the reduction in death rate has occurred only from those specific causes with which the medical

officer of health has concerned himself. No question is raised concerning the acute communicable diseases, tuberculosis and the diarrhoeas and other ailments of early infancy. On the other hand, "there is no evidence that the chronic organic diseases that are less acute and disabling in the early working periods, but, nevertheless figure heavily in the death rate in impairing physical efficiency, have decreased in the period of time discussed." Of the 5,000 lives saved annually in Detroit, 3,500 of them are saved in infancy. Let us not relax our effort in that direction, but let us see whether more can be done in reducing the rate at the higher age groups, at that period of life where the individual has established himself among his fellow-workers and become a contributing, wage-producing asset to his community. There are scarcely 30,000 health workers on this continent, including public health nurses and sanitary inspectors, as well as the health officers themselves. The latter constitutes one-third of the entire group, and the number of these giving full-time service to their health work is almost infinitesimal. On the other hand, there are approximately 200,000 practicing physicians and dentists, every one of whom should be a health-worker in the truest sense of the word. To use the services of these trained men and to bring them into closer contact with the public should be a well recognized function of the health department. In the final analysis the object of every health organization is to reduce the death rate, extend the average span of human life, and add to the health and happiness of all in order that we may more fully appreciate the life that is before us. To whom must the citizen turn for guidance and consultation in such matters? Is it that uninformed, misled group which believes that disease and sickness do not exist, and consequently steadfastly refuse to recognize it? or, is it the osteopath, the naphropath, or the chiropractor who likewise exhibits his scorn for the germ "theory" of the cause of disease? The medical officer of health, because of the very position he holds, can do more than anyone else to mold public opinion. The ethics of the medical profession are rightfully of a very high standard, but the same cannot be said of the various cults and sects whose very strength is to be found under that veil of mystery which the medical profession has spread like a fog between itself and the public. The American Medical Association, with its new publication, "Hygeia," can do much to clean up the atmosphere and remold the public opinion, but the chiropractor is still in the field, spending huge sums of money, publishing journals of his own and influencing legislators to vote in his favor. Public sentiment must be

changed. The health officer must undertake the task with the co-operation of the practicing physician. The health officer must endeavour to re-establish that feeling of friendship and responsibility which so long existed between the family physician and his patient with advantage to each; he must make clear to the uninitiated the complications of modern medicine, and why it has become impossible for a single individual to be an expert in every line, and, finally, the health officer must work with and not in antagonism to the practicing physician.

A health clinic should serve primarily as an information bureau. It should do nothing to relieve the citizen of a responsibility which is rightfully his. To admit for treatment cases which can afford to engage the services of a private physician is to create paternalism and thus defeat our main purpose. The Detroit Health Department maintains a venereal disease clinic with an annual attendance of 110,000, representing 30,000 individuals. The great majority of these people come voluntarily, and less than half are found venereally infected. They are getting the idea of periodic physical examination, and when, upon report of the social service division, it is determined that the patient can pay, he is despatched to the physician of his choice. This rule applies likewise if he is infected with a venereal disorder. A written report is mailed to the family doctor, together with a copy of the laboratory report. Attached to the bottom of the report are three slips for the physician; one, on which he can report the arrival of the case in his office and his acceptance of the responsibility for the care and treatment of an infectious case; two, report of the fact that the case has not reported at his office, and three, report to the effect that the case that has been treating with him has discontinued such treatment without permission. If either of the last two menioned slips are returned, an officer is despatched to apprehend the infected person, and his treatment is completed or he is detained under quarantine. More than 100 new cases are being sent to the family physician or specialist each month. The people are able to pay and the interests of the health department are satisfied as long as treatment is administered. It is an example of what an organization can do toward directing cases into the proper channels, and the physician in turn becomes sympathetic to the work of the department.

This same method of referring cases applies not only to the correction of physical defects found among school children, but likewise to cases admitted to prenatal or infant welfare clinics. It is understood, of course, that the case is given complete and adequate

care if the patient is unable to afford the services of a private physician. Again, in many instances, the physician desires that the department continue its educational work through the agency of the public health nurse, while the doctor himself accepts responsibility for the case. The following memorandum concerning prenatal women is illustrative:

DETROIT DEPARTMENT OF HEALTH.

Special Order No. 2.

To Division of Child Welfare, relative to attention given by the Department of Health to prenatal women who are or are not in the practice of private physicians.

1. Prenatal cases who are being given prenatal care by a private physician are not to be given attention by the nurses or clinic of the Health Department.

2. In the case of patients able to pay and who have a private physician, but who are not going to this physician for prenatal care, a circular will be sent the physician asking whether he does or does not want the Department of Health to give prenatal instruction. Subsequent attention to this case will depend upon the physician's reply. After the elapse of ten days, if the physician has not replied to the department's communication, the name of the physician, together with the name of the case, will be given to the Medical Director to call the physician on the phone relative to his desires in this matter.

3. In the case of patients who are able to pay but have no private physician and exhibit no inclination to get in touch with a private physician, the nurse will invite the patient to the Department of Health clinic for the purpose of demonstrating the value and advantage of prenatal care, and the Department of Health clinic will make it a point to urge her to secure a private physician. If after a reasonable length of time, that is, after two or three visits to the clinic, the patient does not choose a private physician, the case shall be dropped by the Health Department. That is, if the physical condition of the patient is satisfactory, she will not be encouraged to come to the clinic, and only an occasional inquiry into her condition will be made by the nurse. If, however, the clinical symptoms and laboratory findings are not satisfactory, she will be kept under clinic supervision until she can be persuaded to employ a physician, after which the clinical and laboratory findings will be given to the said physician. On the other hand, if the patient does

choose a private physician, the Health Department shall communicate with him, stating the circumstances, and asking whether he does or does not wish the Health Department to continue its prenatal instruction. Further action will depend on the reply of the physician.

HENRY F. VAUGHAN,
Commissioner.

There are many other ways in which the health officer can assist —by lectures, by radio talks, by prosecuting fakers, cultists, religious fanatics and unprofessional physicians, by assisting in raising the standards of medical training and practice by the use of his clinics and hospitals, by encouraging energetic and competent men to specialize in public health administration, and, most important of all, by workng with the various medical societies, their committees and individual members. The Health Expositions so popular at this time offer an opportunity for a general physical survey without cost to the public—an educational feature of exceptional value and, ncidentally, a splendid and, at the same time practical way of teaching the public the proper channels in which to receive consultation, advice and relief.

If we utilize the facilities at our command and set about to properly instruct the uninformed public, there is every reason to expect as good a showing in the next 22 years as there has been in the past, and may we hope also to make a greater impression upon those degenerative diseases of middle and late life against which Fisk tells us we have made no progress.

Smallpox

By Dr. W. L. Hutton, M.O.H., Brantford.

DURING the last few months various societies have been celebrating the Centenary of three great men, Pasteur, Mendel and Edward Jenner. It is doubtful if any age can boast of any three men who have conferred such great benefits upon mankind as these three individuals and it seems peculiarly fitting that we should give a paper on smallpox, to-day.

It is hard for us to-day to realize the extent of and the ravages caused by smallpox in days gone by and this is my excuse for quoting from a medical book written by Dr. Wm. Buchanan and first published in the year 1783. Dr. Buchanan says:—

"Such as have not had the smallpox in the early period of life are not only rendered unhappy, but likewise in a great measure unfit for sustaining many of the most useful and important offices. Few people would choose to even hire a servant who had not had the smallpox far less to purchase a slave, who had the chance of dying of this disease. How could a physician or a surgeon, who had never had the smallpox himself, attend others under that malady? How deplorable is the situation of females, who arrive at mature age without having had the smallpox. A woman with child seldom survives this disease: and if an infant happen to be seized with the smallpox upon the mothers breast, who has not had the disease herself, the scene must be distressing. If she continue to suckle the child, it is at the peril of her own life, and if she wean it, in all probability it will perish. How often is the affectionate mother forced to leave her house and abandon her children at the very time when her care is most necessary? Yet should parental affection get the better of her fears, the consequence would often prove fatal. I have known the tender mother and her sucking infant laid in the same grave, both untimely victims to this dreadful malady. But these are scenes too shocking even to mention. Let parents who run away with their children to avoid the smallpox, or who refuse to inoculate them in infancy, consider to what deplorable situations they may be reduced by this mistaken tenderness. As the smallpox is now become an epidemical disease in most parts

*Read at the annual convention of the Ontario Health Officers' Association, 1923.

of the known world, no other choice remains but to render the malady as mild as possible. This is the only manner of extirpation now left in our power, and though it may seem paradoxical, the artificial method of communicating the disease, could it be rendered universal, would amount to nearly the same thing as rooting it out. It is a matter of small consequence whether a disease be entirely extirpated, or rendered so mild as neither to destroy life nor hurt the constitution; but that this may be done by inoculation, does not now admit of a doubt. The numbers who die under inoculation hardly deserve to be named. In the natural way, one in four or five generally dies; but by inoculation not one of a thousand. Nay, some can boast of having inoculated ten thousand without the loss of a single patient. I have often wished to see some plan established for rendering the salutary practice universal, but am afraid I shall never be so happy. The difficulties indeed are many; yet the thing is by no means impracticable. The aim is great; no less than saving the lives of one-fourth part of mankind. What ought not to be attempted in order to accomplish so desirable an end?"

In an earlier work "The History of Health," published by a Dr. McKenzie, we find these words: "In the natural smallpox how often are the finest features and the most beautiful complexions, miserably disfigured. When the smallpox is epidemic entire villages are depopulated, markets ruined and the face of distress spread over the whole country.

"From this terror it arises, that justice is frequently postponed or discouraged, at sessions or assizes where smallpox rages. Lastly, with regard to the soldiery, the miseries attending these poor creatures, when attacked by the smallpox on the march are inconceivable, without attendance, without lodgings, without any accommodation; so that one of three commonly perishes."

What Dr. Buchanan and Dr. McKenzie have to say about smallpox in England at the close of the 18th century, gives us some understanding of the deplorable conditions then existing and we can readily understand the joy and hope with which the world received the announcement of Dr. Jenner's discovery of vaccination. The English Parliament voted a total of £30,000 to Dr. Jenner in recognition of his services to mankind, and this official recognition compares very favorably indeed with the meagre recognization which Dr. Banting, the discoverer of Insulin has received from the Legislative Assembly of Ontario. From Jenner's day to this, vaccination has remained the only sure and certain

obstacle in the path of the inward march of smallpox. No truth in the realm of preventive medicine is more firmly established than this, that recent vaccination confers immunity against smallpox and probably no scientific fact has been more fiercely assailed by the forces of ignorance, prejudice and self-interest.

Vaccination has been described as an agent of civilization, but there is hardly a recorded and well known example of the efficiency of vaccination in preventing and controlling smallpox, the truth of which has not been challenged by propagandists opposed to vaccination.

The well-known German figures, showing the mortality in Prussia from smallpox before and after the compulsory vaccination law of April 8th, 1874, have been challenged. These figures are illustrated in the accompanying diagram and they show the remarkable effect of general vaccination in stamping out the great smallpox epidemic which started in 1870. The companion diagram shows the results in Austria where compulsory vaccination was not resorted to. The rejoiner of the anti-vaccinationists to this remarkable demonstration of the value of vaccination and re-vaccination, takes the audacious form of a flat denial that the Prussian law of 1874 was the original compulsory vaccination law, that in point of fact the law really dated from 1835. As a matter of fact the Prussian law of 1835 referred only to soldiers in the army and general compulsory vaccination was never the law in Prussia until 1874.

The propogandists opposed to vaccination have endeavored to discredit the remarkable success of the United States authorities in controlling smallpox by vaccination in the Philippines. The facts are that—Before the American occupation of the Philippines there had been an annual smallpox mortality of something like 40,000. In 1902 after the insurrection had been broken an energetic vaccination campaign was inaugurated and all discovered cases were isolated. How successful this campaign was is shown by the statement that "the 19,000 deaths in 1903, fell to 9,000 in 1904, to 4,000 in 1906, to 3,000 in 1910, to 1,000 in 1911 and to a few hundred annually from 1912 to 1916." In 1918 the smallpox deaths jumped to 14,574, and in 1919 to 45,873 deaths and these increased mortality rates were hailed by the anti-vaccination propagandists as proofs that vaccination was a failure as a preventive of smallpox. Now the truth is that the Philippines had neglected systematic vaccination from 1909 to 1918. In the 1918 epidemic 93 per cent. of all deaths from smallpox occurred among those who were un-

protected by vaccination. The records further show that 89 per cent. of the cases of smallpox occurred among unvaccinated children, the majority of whom were born after 1914. The record of the Philippine Islands is, therefore, only one more leaf in the book of Experience which teaches that primary vaccination and revaccination every seven years is the only measure which promises any smallpox protection to the peoples of this earth.

The subtle nature of these attacks upon the success of vaccination constitute one of the main difficulties with which health officers have to contend while combatting a smallpox epidemic and any policy which tends to minimize the effect of anti-vaccination propaganda deserves the most earnest consideration.

In dealing with a smallpox epidemic we, as health officers, are forced to follow one of three policies—either confine ourselves to isolation of the patient, and quarantine and vaccination of the other members of the patients' family, or second, invoke the powers of the Vaccination Act and require compulsory vaccination, or third, endeavor by a well thought out policy to surround each discovered case of smallpox by such a ring of vaccinated persons, that the disease dies out for want of susceptible persons in whom to propagate itself. The first policy may be successful where smallpox has not gained a foothold in a community, but once smallpox has gained a foothold I believe this policy is doomed to failure. The second policy has never yet failed to arouse the most bitter opposition and unending troubles for the unlucky health officer. It is a curious reflection that England who gave us Jenner and vaccination, has amply endowed us with disciples of the anti-vaccination cult. Mankind is not easily convinced of the necessity of submitting to an operation which undoubtedly causes inconvenience, the certainty of the lesser evil—vaccination—discounts the possibility of the greater evil smallpox. Smallpox itself is the great teacher of the value of vaccination and every health officer should record in his own community and point out the lessons which she teaches. It is probably true that health officers as a class are always ahead of public opinion on questions of disease prevention, but no health officer can afford to be so far ahead of public opinion that he converts public support into public opposition.

The extensive powers which the Vaccination Act places in the hands of health officers may some day be needed and when those powers need to be exercisd, the public will stand behind him. The recent experience of Denver, Colo., where 190 persons died from smallpox between Jan. 1st and Nov. 18th, 1922, is the sort of epi-

demic where a health officer must use all his powers in order to quickly stamp out the disease. But I submit that where smallpox is of the mild type, which has been prevalent in Ontario for so many years, that we as health officers are well advised to reserve some of our powers and confine our activities towards securing the vaccination of all known contacts and endeavoring in this manner to stamp out the disease. And I suggest further that the recurring epidemics of mild smallpox during the last few years, have been blessings in disguise. The keenest students of public health and the most reliable authorities unite in predicting that the present type of mild smallpox will change in the future to the more virulent fatal type, and when that change takes place we shall have good reasons for congratulating ourselves upon the lessons which mild smallpox is teaching to-day, and upon the host of vaccinated individuals resulting therefrom.

In Brantford our policy consists in isolating the patient usually in the smallpox hospital, in quaranting and vaccinating the members of the patients' family and in endeavoring to secure the vaccination of all contacts of the patient and all contacts of the other members of the patients' family and all contacts of any one who has been especially intimate with the patient. In pursuance of this policy where the patient or a member of the patient's family is a school child, we have the school nurse look for vaccination marks on all the children in this classroom. Those showing good marks are allowed to remain at school. The rest are sent home with instructions that they may return to school at any time provided they return with a doctor's certificate that they have been recently vaccinated and they are instructed that failing his certificate, they must remain home for two weeks. This policy results in the vaccination of large numbers of children, and when smallpox results among the unvaccinated the cases are soon discovered by the follow up work of the school nurses.

When the patient or a member of the patient's family works in an office, store or factory the manager of the business is approached and requested to exclude from his premises all employees who have not been vaccinated within the preceding seven years. The excluded employees are at the same time informed that they may return to work at any time provided they return with a doctor's certificate, that they have been recently vaccinated and they are instructed that failing this certificate they must remain home for two weeks—the incubation period of smallpox. Managers as a rule are only too anxious to co-operate with the health depart-

ment in stamping out smallpox, and the mere suggestion of the possibility of having to close the office, store of factory invariably identifies the manager's viewpoint with that of the health officer. Facilities for free vaccination are coincidently provided by the local Board of Health and large numbers avail themselves of this privilege and add to the number of protected individuals. And in addition guards are placed to watch any irregularly visit to quarantined homes.

The above policy carried out logically, becomes increasingly effective the longer smallpox lingers in the community. Each fresh case adds to the number of protected, recently vaccinated individuals and even the unvaccinated are benefited by the vaccinated condition of those who have submitted to this minor operation. As a distinguished Frenchman has said: "The name of Jenner like the sun above, shines upon all the peoples of the earth and has no regard for race or creed or frontiers."

Recreation for Women and Girls

By Miss A. F. Hodgkins.

I CONSIDER it a great honour to be invited to address this progressive society on my favorite subject of Recreation. The longer I am connected with this phase of education the more important it seems to me as a cure for many of our present day problems.

You are probably all more or less familiar with the trend of developments in the medical world for the last fifty years. The physicians and scientists first concern was to discover the cause and the cure for such dreaded diseases as smallpox, diphtheria, malaria, social diseases, typhoid fever, and many others. The task which now is theirs is to find the means of preventing such diseases. First, by protecting our citizens with every sanitary measure; secondly, by means of education, developing a physique that will be capable of withstanding any disease.

Recreation is an important factor in combating any disease, for if we utilize our leisure time to the best advantage, by devoting it to outdoor sports, and healthy exercise, we shall keep our bodies in such a state of health that the white corpuscles, the policemen of the blood will be able to do their duty and ward off disease. In combating social disease, recreation assumes unusual importance, because of the causes which augment and spread this disease. Immorality we are told is the most important factor in the spread of venereal diseases. It is not in our work or in our play that we do wrong—as long as we are employed in some way we are generally safe from temptation. Idleness as always is the devil's most effective tool. Therefore, our problem is so to provide for the leisure time of the people that there will be no place for idleness.

We are all well aware that the time to formulate a love of sports and acquire the health habits that will strengthen the will and body and divert their activities to healthy pursuits is in youth. Comparatively few people get much out of their leisure time and they are chiefly the odd and unusual persons generally self trained, for up to the present time we have been so concerned with teaching people how to work that teaching our people how to play is a new and unusual task and we must do it, for leisure is on the increase

and unless we teach people how to use it, it will surely become a destructive agent.

When Col. Gorgas began the work of clearing the Panama Canal zone of Yellow Fever and Malaria, his first task was to destroy the breeding places of the Anepholes and Stegomyia mosquitoes, which he did by clearing away the undergrowth, cutting down trees, and allowing the sunlight to penetrate into the thickets and dry up the stagnant pools. Where it was not possible to dry up the breading places, oil cans were placed over the streams and lakes where the lavacide dropping from the cans spread a film of oil over the surface of the waters and when the mosquito lava come to the surface to breathe the oil killed them.

We must begin in our campaign with the child and his education and recreation, and by a proper system of health education and by providing him with the necessary equipment and instruction for his leisure time, destroy the breeding places of bad habits, vicious thinking and destructive vices.

Our first need in this direction is a recognition of the place of physical education in the educational scheme, not as an accessory but as the fundamental of all education. I do not mean by a proper system of physical education a setting up drill for ten minutes a day in a warm school room between desks, but rather a health programme, drawn up and administered by thoroughly trained teachers and conducted in a well-equipped gymnasium, or playground. This programme should include instruction in Anatomy, Physiology, and Hygiene, sports, games, folk dancing, free-arm exercises, swimming, athletics, and most important of all the child should by means of charts, physical examinations, lectures, and competitions, be awakened to an interest in himself, and taught to regard his body as a temple that is sacred, and the dwelling place of the soul. The mental and physical examinations of school children has become one of the most important factors in all health education, by this means we are able to detect the feeble-minded and the physically unfit child and deal with them as they should be, as cases. It is estimated that two per cent. of the school children of the U.S. are feeble-minded. How many of our problems would be partially solved if this method of detecting the mentally unfit had been put in use a generation ago, and the unfit removed from the community. In the recent war some countries made the painful discovery that as high as 35 per cent. of the men who volunteered for service were found unfit. It was estimated that of this number 90 per cent. of

their defects could have been cured before the child was 15. The ultimate strength of the nation is proven in times of war. When trouble arises, we resort first to conference, then to law and finally when all else fails to warfare. The nation that can demand of its citizens the supreme sacrifice in times of war ought in all fairness to furnish them with a training commensurate with this test. According to statistics published by the Registrar-Generals Office in London, it was estimated that working men in England and Wales live only half as long as men of the leisure class. This discovery and the findings of the draft board regarding the low physical standing of the men enlisting for service, led Sir George Newman to say to the Board of Education in London: "No self-respecting nation can go back after this war to the state of things which makes the proper education of mind and body the luxury of a small and privileged class. This reparation at least we will make to those from whom the nation has taken all and given nothing; that it shall never be said again that not until they were needed for the ravages of war is any care taken of the mass of youths of this country." Let us profit by the lessons the war taught us and prepare our youths not for the ravages of war but for the arts of peace, free from handicaps, mental and physical.

The next important item in our prevention is the establishment of playgrounds, clubs and community centres where the children may spend their free hours. The street is no place for the child, a playground is as necessary to the modern city as the fire department, both are preventive agents; and the city which neglects to provide the proper outlet for the surplus energy for its children can prepare for trouble, for it will surely come. Many people say that the child should stay at home.

Excellent: The ideal home is the ideal place for any child, but alas, what have most of our homes to offer in the way of attraction. As Ernest Herman, a leader in the play movement often said: "This is the day of 'ash can back yards' and 'clothes reel porches.'" Look out upon any of the back yards of the city and see if this statement is far from wrong. Hundreds of families offer only a one-room home. There is no place inside or out, so the child goes on the street to play and is chased home by the policeman on the beat or gets arrested for breaking a neighbour's window. Too many cities seem to be built with a place for everything but the children. It is part of our job as guardians of the race that there should be vacant places left for playgrounds and parks accessible for every child. How wonderful if near every city there could be a place like the

Palisades Park in New York where within easy reach of 8,000,000 people there is plenty of opportunity to get out and commune with nature.

The fact that playgrounds have reduced to a very appreciable degree juvenile delinquency in every neighbourhood where they have been established, points to their use as a safety valve. College athletics were first introduced in Switzerland, not from any noble idea that they would be of physical benefit, but to prevent the students from destroying property, and getting into mischief. Our idea is not to establish playgrounds simply to keep the children off the streets and to use up their surplus energy. Joseph Lee says: "We have come a long way from the idea of play as policeman, to play as liberator from play 'to keep the children off the street' to play as an essential means of life," but it has these attractive features as well. People are beginning to realize that the play of children is merely part of the machinery and means of developing wholesale normal adults—in other words, good citizens. Don't make a mistake in establishing these centres in thinking that all you need is material equipment. Material equipment never has and never will solve a human need. Better a back yard with a good leader than a million dollar equipment without a leader; and don't forget to advertise your playground and recreation centres so that people may know about them. Commercial recreation spends millions on advertising. Why shouldn't we devote a few dollars to this factor. We cannot simply build a house and say "here it is, come and enjoy yourself," we must do more and provide someone to teach folks how to enjoy themselves.

Our next step in our preventive campaign is to take care of the working girl, and supply the necessary means for making her life worth while. We must not make the mistake of bringing children up, surrounding them with opportunities for play and education, and then as soon as they become self-supporting send them out into a cold and uninterested world and expect them to continue as useful members of society. A large percentage of the women in industry and by industry we mean all types of work, are away from home, so our first problem is the housing problem. If you have never lived in a rooming house you cannot appreciate the problem of a girl who is obliged to make her home in hall bedrooms minus any of the comforts that she has often been accustomed to, and with so little to make her home life attracive that she walks the street in preference and goes to the cheap dance halls and the movies because they are both warm.

(*To be continued*)

Ontario Health Officers' Association

PRESIDENTIAL ADDRESS DELIVERED BY DR. D. V. CURREY, M.O.H., ST. CATHARINES, 1923.

YOU may be sure, gentlemen, that I feel greatly honored to have been elected to this high office, and with your assistance, I trust I may, in some small way, help along the interests of our Association.

Preventative medicine has been making big strides, especially in the last few years and it behooves every Health Officer to keep abreast of the times. By attending these annual meetings one is able to hear about the new work, and it shows that we are interested in our duties when we are present.

I sometimes wonder if all of us sit back at the year's end and think how great our opportunities of doing good have been and how little we really have accomplished; and I wonder if we are not inclined to wait for public opinion to point out our work for us. One Medical Officer of Health told me quite frankly that he did not look for work because he was not paid enough, and my opinion was that he was paid all he was worth. We should do all the public health work possible, regardless of salary and there is no doubt that if we show our Boards of Health that we are energetic and efficient that our remuneration will keep pace with the work we do. Many of us, unfortunately, do not know the "Public Health Act" sufficiently well and some of us, I regret to say, never open this important book from one year's end to another. A few years ago, especially in the smaller places, the Health Officer considered his duties well done if the infectious cases were placarded and if no filth was seen from the street. This may have been good enough fifty years ago, but no self-respecting health worker could possibly be satisfied with this amount of work to-day. We are expected to inspect the community under our jurisdiction at least once a year and if this is properly done, one can usually find enough work to keep him busy for the remainder of the year.

To do good work, each of us must have the backing of our Local Board and in many instances we have to teach them to appreciate public health work. Regular meetings at frequent intervals will not only interest them in the work but will show them

that we are doing something. At least four meetings each year must be held ("Public Health Act," Section 16), and a written report including the work done since the previous meeting and recommendations for the future work of the Board, should be prepared by the Medical Officer of Health. A yearly report should be presented to each Local Board before the fifteenth of November and a copy should be sent to the Chief Officer of Health.

Many of us forget to make an annual inspection of all schools even when the forms are sent us as a reminder, and few of us remember to give a short talk to the pupils on health matters when we have the opportunity.

One of the biggest health problems of the age is that of venereal diseases. We know that Syphilis is fairly common and that Gonorrhoea is much more so, but in spite of this, to-day, practically no preventative work is being done outside of the larger cities and in only a few places have clinics been established or is there a place where the Health Officer can send cases for free treatment. With an organization such as ours, spreading as it does, all over the Province, I feel that we are not handling this problem as well as we might. When a known infected person leaves our municipality, we should make sure that this person reports to the Medical Officer of Health of the municipality to which he is going. "Co-operation" should be our watchword in Venereal disease prevention.

In recent years, the infant mortality rate is often taken as a criterion of the health work done in a community. If this is so, some of us need to work a great deal harder. Are we comparing our infant mortality rate with other places to see how we stand? Are we doing anything to try to prevent the terrible wasting of children's lives? "Well Baby" centres have been established in many places and practically all are doing splendid work. Those reported as having the best results are usually backed to the limit by the Medical Officer of Health and in a very short time, the good results will be seen in the reduction of the infant mortality.

Milk may be a wonderful food for children or a very dangerous one, and every Health Officer should make sure that the dangerous kind is not sold where he has jurisdiction. Some of us have looked at the milk occasionally and perhaps tasted it or examined the cream line, and pronounced it O.K. The number of bacteria per cubic centimeter means far more to a child than the amount of cream, yet at the Provincial Board of Health Laboratories last year, comparatively few samples were received for bacterial count.

We owe it to the children to make sure the herds are healthy, the stables clean and well kept, the utensils properly sterilized and the handling of the milk as perfect as possible. If we only did this in each community, we would save the lives of many babies.

The Health Nurse is an essential factor where any intensive public health work is to be done and it is useless to try to do good work without a Nurse's services. No man is able to go into a home and instruct in the way these women can, yet we find very few rural communities availing themselves of a Health Nurse in spite of the fact that investigations have shown that the country children are even more defective than those of our cities.

Do we investigate every complaint as soon as possible, no matter how trivial it may appear to be and do we report to the complainant, the result of our enquiry? If we do, then we prevent many nuisances from arising and show our Boards of Health that we are on the job.

We should encourage each Local Board of Health to put in a refrigerator for keeping supplies from the Provincial Laboratories. None of us ever know when an epidemic of smallpox, diphtheria or other preventable disease may break out and we should have a proper supply of vaccine and sera on hand at all times. We should encourage the physicians in our municipality to obtain these supplies from us in order that our own supply is kept as fresh as possible; all out-dated supplies should be thrown away. Unless these supplies are kept cool, they do not retain their potency.

In every municipality, there are many societies and associations which may be very anxious to do public health work, especially along the lines of child welfare and prenatal hygiene, if the way is pointed out to them. Every encouragement should be given them by the M.O.H. and he should take a personal interest in their welfare.

Not many part-time Health Officers keep a proper record of the work done by their departments so that few of us can show the general public, in black and white, enough returns for the amount of money expended each year by our Local Boards, and because of this, the general feeling, in the smaller communities at least, is that the Board of Health is not a very necessary body. We must endeavor to correct this false impression by doing everything in our power to better health conditions and by teaching the people that it is a privilege to serve on the Local Board of Health, that this Board holds the most important position and that the Medical Officer of Health is the hardest working officer in the

community. Every official of the Board of Health should keep a record of work and if each of us determines to keep a daily diary of work done during the next year, I am sure that when we review this in a year's time, the good work we have accomplished will surprise our Local Boards, the general public and even ourselves.

Let us remember what Napoleon said: "No man can win on the battle of life who has not Courage and Persistency, and as neither of these are found where Energy is lacking, it must follow that Energy is the indispensable quality of great SUCCESS," and by our energy and persistency, let us put public health work in the place where it should be . . . the greatest work in any community.

The Victorian Order of Nurses for Canada

"MATERNITY."

BY ANNAH L. PRICHARD, *District Superintendent, Winnipeg Branch, Victorian Order of Nurses for Canada.*

TO live in your country's field of service, to count these days the most opportune to look forward, to look backward, and there gather not only inspiration but a clearer sense of the ideals for which the nursing work stands, is to keep faith with our work.

The map of Canada spreads before me like a vast panoramic scene, as home after home presents its view. Perhaps it is a room above a grocery store, a new-born babe and mother; or perhaps it is a returned man's family, an expectant mother away on the lone prairie, or in a city home, wherever she is, whoever she is, she is of paramount importance. It is she who is to give the brain and brawn to our nation. It is she who is to fill up the gaps made vacant by the war. It is she, Motherhood, who has been too long neglected; too long has "leave it to nature" occupied our mind. Now, face to face with our realization made keen by war, we emerge into a new era, an era of conservation of life, an era of consciousness of duty, to these our long-suffering little mothers.

The remedy proposed is prenatal care. We propose to teach the expectant mother, to impress upon her the importance of medical and nursing care; to give the babe the right not only to be born, but to be born alive. Let me tell you that in one small district I know, we had 28 still-borns during the month of February. What might it have been if all had been reported is doubtful to say. Figure that with the miscarriages, interrupted pregnancies, and then estimate the loss of life to our nation. This, of course, is not considering the numerous prematures, the depressed and invalid mothers that fill our hospitals. Now ask yourself if we are not asleep at the switch.

Are they preventible? Yes, hundreds of them, and when we are told that more women die from causes arising from child-birth than any known disease, except tuberculosis, and that many of our tubercular cases are traceable cases of child-bearing, we know we are asleep at the switch.

When told Canada's loss during the war we held up our hands in horror and cursed the conditions that led to this wholesale destruction of life. To-day, we can safely say, at a rough estimate, that double that is Canada's loss through direct causes of child-bearing, and hang our heads in shame. Call it defective civilization, but ask what is being done, and how much is being spent to prevent this loss.

Time and time again I hear "what can we do?" There is Mrs. So-and-So, a houseful of children, I showed her this, I told her that; look at these soiled and toiled hands, lift them, clean them, rest them, shorten her hours of toil.

Home problems are nation problems. The health of the home is the health of the nation. What matter if she thinks that incompetent Mrs. Smith is the only one she can pin her faith on; show her our care, our concern.

I am sure mothers often feel like the man who said: "I don't care where Jesus was born, I only want to know, if He is on Oxford Street to help me to live right." That's it—on the street, in the home to help her live right.

Do you think this mother has nothing to tell, nothing to ask? Listen! The prairie mother says: "I'm lonely, I dread it. Do you think my baby will live? Will you come at night?" Everything that concerns her must concern us. We are our sister's keeper. Tell her there are many Oxford streets, and that He who gives life will beautify and hold dear that which He gave. Refresh her with the fragrance of our Master's promise, "Lo, I am with you always, even in the hour of travail."

Good teaching makes easy learning. The receptiveness of group instruction is in the visualizing. The demonstration which appeals to both foreign and English mothers indeed makes easy learning, but the hope, the home visits, it is there that confidence is secured. It is here not only the sacredness of life is impressed, but the physical importance of the life that begins nine months before birth, the bone and body that creates but once. It is here we pave the way for the most valuable bedside care. The nurse, no longer a stranger, the patient's confidence secured, her quietness of mind assures us of visible and invisible benefits derived.

Sir Arthur Newsholme says: "The safe delivery of the mother in childbirth is a matter of national importance." I assume that the call from her in childbirth is of national importance, Shall we keep faith with our work, or shall we begin with one accord to make excuses? "I do not like obstetrical nursing, I do not do night work,

I never work out of the hospital, I do instructive work only." Your nation's call to war waited not on excuses. Your nation's call to-day is of equal importance. Shall we keep faith with our work? Or shall we through lack of asceptic delivery, adequate careafter, add to the already too high maternal and infant death rate? Indefinitely I am saying "already too high" the records of which I have none. So far as I know, our infants record only as the lost and found babies of Canada, and the found have often little or no chance of life.

As public health workers, we know that equal chance for equal health is not confining. It means the medical and nursing oversight of the maternity bed, whether it is in the hospital, the home of the rich, or in the little room above the grocery store with not a niche to spare. It is all of the same national importance.

We hear of our women in rural communities never seeing a doctor, or are seen but once, and are soon up and cooking for large farm crews. Eventually it will cost more for the State to patch up than to have raised the health child. The weak mother just out of bed is not to slip away from us. Here comes our "postnatal." It is only a part of the great whole that goes to make up the healthy offspring for our nation.

It is the same careful medical and nursing supervision to keep the well infant well; to see that the mother adapts her prenatal instruction to the real care of her baby; to instruct and help her to follow out her physician's orders is to reduce the large infant death rate during the first month and to restore to health and vigor the Motherhood of our nation.

For years the ideal of nursing has stood a tower of strength in the conservation of life. To-day our nation's call is symbolic of their great faith in our service and patriotism. Shall we keep faith with our work?

Social Background

"Desertion as a Toronto Problem"

MISS MARY IRENE FOY, *Catholic Welfare Bureau.*

FAMILY desertion is becoming increasingly common and constitutes a very serious problem. One of the most difficult tasks which confronts the Social agency to-day is that of making satisfactory provision for the family which has been deserted by the husband and father.

There are many reasons advanced for the prevalence of this form of distress, at the present time. It is blamed on the War, which unsettled men's minds, and on the industrial depression, which enforces idleness on men and makes them discontented and discouraged. However, we must look for the causes in the man's own character and training, and within the home. It is not usually the man who is unemployed who deserts his family. More frequently he gives up a position at the same time he leaves home. Sometimes the wife is partly to blame. She may know little about housekeeping—may be unable to spend her husband's earnings wisely, or to make the home comfortable and happy. But very often the woman who is deserted is an excellent housekeeper, and a good wife and mother. Of course, faults on the wife's side can never justify a man leaving his little children to suffer, or to be provided for by others.

There are several types of deserters. There is the man who disappears and who is not seen again for years, perhaps never. There is the periodical deserter, who, whenever there is any trouble or sickness in the home leaves his wife to face it alone, and later when the crisis has passed and he is weary of his holiday returns and expects to be welcomed. There is the man who continually neglects his family and refuses to support them.

The permanent desertion is perhaps easier to deal with, although it entails much misery and suffering. But some settled arrangement can be made, and as the children grow older the mother may be able to go to work. On the other hand, where every year or so the family is deserted, and then whatever plans are made for

them are upset by the father's return, it is very difficult to find any permanent solution.

Each case of desertion must be treated individually according to the different aspects of the case. But there are some general rules which may be followed. Efforts should always be made to find the man. It is much more profitable to pay out money to find and bring back the deserter than to spend it on relief for his family, and it is unfortunate that our laws do not more fully recognize this fact. When the man is found he should be forced to support his family, but not necessarily to live with them. After a first desertion a reconciliation between the husband and wife is often desirable, and wise treatment at this time may keep the family together permanently. But the persistent deserter, the man who habitually neglects or abuses his family should not be allowed to return home, at will, just for economic reasons. If the deserted was more sternly dealt with, if he were made to realize that he had committed a crime punishable by a jail sentence, we would not have so many deserted families in our community.

In the case of desertion by the father the children should not be admitted to an institution. This is often what he expects and wishes to happen. In certain cases it has been suspected that the father and mother have separated deliberately in order to force an institution to take their children. In the past our orphanages have been filled with children from homes broken by desertion. Those children could not be adopted, and remained in institutions until they were old enough to work when they were claimed by their parents for whom they had neither affection nor respect. As long as the mother is fit to look after her family the home should be kept together and the children be assured the care of one parent even if neglected by the other. While the children are at home there is a much better chance of securing support from the father and of bringing him to a realization of his responsibilities.

Many deserted families struggle along without becoming dependent upon organized charity in any way. The number will never be known. However, the number of cases that do become a burden upon the charitable organizations is so great that unquestionably desertion must be recognized as one of the important causes of destitution and dependence in Toronto to-day.

From a mass of statistics collected from a great variety of organizations in various parts of the Province, but chiefly in Toronto, it is evident that in times of normal employment, upwards of ten

per cent. of the families being cared for by Social agencies are in difficulty because of desertion by the husband and father.

The following statistics from certain large Social and Relief organizations in Toronto convey an idea, though an inadequate one, of the magnitude of the problem of desertion in this community. The figures cannot be totalled as no effort has been made to eliminate duplicates. For instance, many of the cases found under Welfare Branch Indoor Relief, must necessarily appear also under admissions to Children's Institutions. It must also be borne in mind that some cases are dealt with by organzations not mentioned, and also that a much greater number are able to manage without resource to any Social agency.

The figures of the city of Toronto's outdoor relief for the past four years are as follows:

	Families.		
	Desertion.	Total.	Desertion.
Year ending April, 1919	108	991	10.9%
Year ending April, 1920	106	927	11.4%
Year ending April, 1921	178	1,802	9.9%
Year ending April, 1922	229	6,993	3.3%

The most interesting fact conveyed by these figures is that in times of normal employment, upwards of ten per cent. of the families in receipt of public outdoor relief are in need because of desertion on the part of the husband and father. Also a marked increase in the number is shown in the past two years, which is accounted for in part by the fact that during the period of depression many persons come upon public relief funds who in normal times would be self-supporting, or could be cared for by private funds.

The direct cost to the city of Toronto of relief to these deserted families can be conservatively estimated. The average cost per family per year is $45.31. Desertion being a more permanent cause of destitution than most others, the deserted families must certainly have cost more than the average rate. Therefore, 229 families at $45.31 per family per annum yields a cost which is obviously below the truth, namely $10,375.00 a year.

The number of families upon which social work was actually done by the family staff of the Department of Public Health, Welfare Branch, in October, 1922, was 156, of which 16 or 10.3% were desertion cases. The worker on cases involving indoor relief handled 73 families, of which 31 or 43.1% were desertion cases.

The number of families on the books of the Neighbourhood Workers' Association in March, 1922, was 1,083, of which 88, or 8% were desertion cases.

Of 147 families given material relief in 1922 by the Family Welfare Board of the Jewish Philanthropies of Toronto, 6 were desertion cases.

The analysis made by the Welfare Branch of reasons for admissions to the twelve children's institutions receiving city grants, shows that of 1,578 children in these institutions during the year ending September 30th, 1922, 172, or 10.9% were there because of desertion by their father. It is conservatively estimated that the actual cost of maintenance of these children in Toronto amounts to not less than $31,000.00 a year.

The Toronto and York Patriotic Fund states that without question they pay out more money because of family desertion than for any other cause. Of 250 permanent support cases on their books at the present time, 86 are desertion cases, which figures to 34.4%.

The Soldiers' Aid Commission figures for the city of Toronto in the last six months shows 1,640 cases handled in the Child Welfare Department, 50 of which (involving 120 children) were due to desertion. This gives a rate of 3.1%. Of 1,404 cases in the Adult Welfare Department in six months, 79, or 5.6% were applications for assistance because of desertion.

The number of persons charged in the Toronto Police Court with desertion in 1921 was only eleven, to which should be added 227 charged with neglecting to maintain their families. We understand that a much larger number were interviewed out of court by the Staff Department of the Police and some sort of arrangement attempted. During the year $27,227.00 was collected by that Department from men who have deserted their families.

The number of fathers charged in the Juvenile Court with non-support of their children is not available, but in ten months $10,-195.00 has been collected from such fathers.

Unfortunately, it is impossible at present to even guess at the number of cases of juvenile delinquency arising in part at least from desertion by the father, but it is safe to say that if known the number would be startling and their direct cost in institutional care alone would command most serious consideration.

The Need—Enforcement of Paternal Responsibility.

In many respects the family problem in a case of desertion by the father is similar to that which arises when the father is re-

moved by death. In such a case the financial difficulty is met by the State, by means of the Mother's Allowance. The allowance does not extend to the deserted wife and children because of the fear of weakening paternal responsibility. If the welfare of such children is to receive a degree of attention approximating to that accorded to the children of widows, it is obvious that the only alternative is for the community to enforce the paternal responsibility about which it is justly solicitous. Certainly our community has fallen far short of its duty in this matter, with the result that not only the integrity of the family and adult morals have suffered, but the physical, mental and moral well being of the thousands of helpless children concerned, has been seriously affected.

Seriousness Already Recognized in Law.

The State has recognized in legislation the responsibility of the father and the social importance of enforcing this responsibility. The process has been a gradual one, but it would seem that the strongest possible recognition of this principle has been given when family desertion was at last made an extradictable offence by treaty with the United States. However, for various reasons this principle, which seems to have been accepted in our legislation, has not found reasonable expression in effective official action. The actual application has ben almost a joke.

The Criminal Code has made non-support a punishable offence and Provincial legislation has provided a means of compelling the deserting husband and father to pay for the maintenance of his wife and children. The chief difficulty arises in the enforcement of these laws.

What Can be Done About It?

Any steps that can be taken, in an effort to prevent desertion, must, of course, begin with education. There seems to be a prevalence of individualism about us to-day, a feeling of—every man for himself—our young people do not realize that the family is a unit and the joys and sorrows coming to the family should be equally shared by both husband and wife.

The seriousness of marriage is not justly considered, and the responsibilities are seriously neglected and disregarded. Perhaps, if a certain lapse of time was required between the purchase of the marriage license and the performing of the marriage ceremony fewer unsuitable unions would take place. It would give the con-

tracting parties at least a little time to think and perhaps change their minds. A case comes to my mind of a little woman who came to our office. She told me she only knew her husband one week when she married him, and at the end of another week he had deserted her and she has never seen him since.

When the desertion has actually occurred, there should be public funds available, to search for and bring the offender back, and then every effort should be made to insure the vigorous and effective handling of such cases. When the man has been brought back and comes into court to answer for his crime it should not be possible for the Crown to maintain that to imprison such an offender would merely add another to the number of persons to be supported by the State. I am convinced that extra mural employment of prisoners, with their earnings going to their wives and children, should be extended and strengthened, and that this kind of treatment is peculiarly adapted to cases of desertion.

I believe a man who will desert his family and leave them in destitution is as great a menace to the community as the housebreaker, or the bootlegger, so why let him go unpunished for his crime?

ONTARIO

The Provincial Board of Health of Ontario

COMMUNICABLE DISEASES REPORTED FOR THE PROVINCE FOR THE MONTH OF JUNE, 1923.

COMPARATIVE TABLE.

Diseases.	1923. Cases.	1923. Deaths.	1922. Cases.	1922. Deaths.
Small-pox	13	0	104	0
Scarlet Fever	228	20	151	5
Diphtheria	203	22	191	19
Measles	2,149	14	2,105	4
Whooping Cough	199	19	65	6
Typhoid	38	11	24	2
Tuberculosis	188	147	204	141
Infantile Paralysis	.....	.....	.....	.....
Cerebro Spinal Meningitis	3	3	3	3
Influenza	.....	13	.....	.....
Influenzal Pneumonia	.....	.....	.....	18
Primary Pneumonia	.....	150	.....	140
Encephalitis Lethargica	7	6	.....	.....
Syphilis	166	.....	219	.....
Gonorrhoea	174	.....	210	.....
Chancroid	1	.....	.....	.....

News Notes

Correction.—In Dr. Porter's paper on "Health Work Among Students," of last issue, the High Systolic Blood Pressure found should read 188, instead of 788, and the Lowest Diastolic Blood Pressure found should read 50, instead of 350.

Mrs. Pankhurst and Dr. Gordon Bates, representing the Canadian Social Hygiene Council, and Dr. J. J. Heagerty, representing the Dominion Department of Health, have returned from an extensive tour covering the Western Provinces. During the trip addresses were given in Fort William, Saltcoats, Yorkton, Wynyard, North Battleford, Saskatoon, Prince Albert, Regina, Moose Jaw, Swift Current, Weyburn, Sask.; Edmonton, Calgary, Lethbridge, and Medicine Hat, Alberta.

The meetings were well attended and received good support from a sympathetic press. In both Edmonton and Calgary addresses were broadcasted by radio. Fourteen new branches of the Canadian Social Hygiene Council are the net result of the tour.

Election of officers for the Canadian Public Health Association at the Health Congress at Edmonton resulted as follows:

President, Dr. J. A. Beoudouin, Montreal; Vice-Presidents, Dr. G. A. Porter, Toronto, and Mrs. Emmeline Pankhurst; General Secretary, Dr. J. T. Phair, Toronto; Treasurer, Dr. J. J. Heagerty, Ottawa.

The Dominion Health Council met in Ottawa on June 19th, 20th and 21st.

The annual meeting of the Canadian Social Hygiene Council was held in Edmonton on June 13th. After the reading of reports from the various Provincial Committtees the meeting was adjourned to meet in Ottawa in the fall

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The Summer Camps conducted by various organizations in Toronto are in full swing.

Dr. C. J. O. Hastings, Medical Officer of Health for Toronto, spoke at the recent Health Exposition in Detroit.

Editorial

A NEW UTOPIA.

The physician as a consultant, the physician as a scientist, the physician as a money maker or money loser, the physician as a medical officer of health, all of these themes might be fruitful sources of discussion. Here we presume to discuss him as a citizen.

The descendant of Hippocrates and Aesculapius is a man of many parts. With an ancestral background of monastic tinge and at the same time a more or less ribald tradition expressed in the latin phrase "quo tres medici ubi duo athei" descending from mediaeval times and doubtless due to his habit of seeing life through biological spectacles donned in the medical school he is more prone to take things seriously than most of his fellows. He sees life and death and their inevitability and, within a more or less narrow sphere, perhaps, achieves enough for his fellow man to almost justify Stevenson's eulogy of him.

Patient service in his peculiar field, personal ideals on the whole high, occasionally a spark of genius expressed in a Jenner, a Lister or a Gorgas, which makes the world feel that through him yet, there may come something which will do more for the world's weal than Marxian or Neitzian formulas. These are on the whole characteristic of the genius. And yet one feels impatient at times. After all it is the profession that makes the man on the whole, not the man the profession. The very entering into and studying of the ills of humanity should be enough to transform a very dolt and one wonders often why with the enormous amount of evidence available as to the ills which affect mankind he should not rise and banish them with one fell swoop. The cogent remark of an eminent statesman that the world's great reforms would come as the result of observations made in hospital wards was much to the point. The observations have been made,—we know the damage why not the reforms?

In common with most of the world the physician is an individualist. He renders individual service to individuals. He thinks neither of people in the mass nor in terms of statistics, because he almost never deals with masses or occupies his time adding

columns of figures. Hence, minus a statistically moulded brain operating in terms of battalions, the application of statistics to groups of people does not result because his individualistic training fits him for something else.

On the whole if he thinks primarily of any one group of people as a group it is of the class of people who are patients. It is these with whom he deals most. With them he discusses to some extent the why and wherefore and to a much greater extent the cure of disease. And being engaged with a specific problem which is immediately before him and out of which incidentally he makes his bread and butter he generally finds himself so absorbingly busy at this alternately prosaic and romantic occupation that other considerations, however important they may be to the body politic, are forgotten.

A great Englishwoman once said: "Give me a world run by doctors and women for a few years and we'll have a world worth while," and doubtless the point of view acquired in hospital wards could be applied to the curing of the world's ills to advantage. The doctor in politics? Yes, if he's not a politician and if he'll really use his medical knowledge in parliament. Also the doctor in the Rotary Club, and in the municipal council, mixing with his fellows more than in the past, getting the common point of view more than ever, thinking ever of the advancement of the community, coming out of his corner, taking off his silk hat and getting into the hurly burly of the world's affairs, striving not only towards the binding up of the world's wounds but to the end that there may be no more wounds forever more. All of which may be utopian but who can say that Utopia is anywhere else but just around the corner.

CANADIAN PUBLIC HEALTH CONGRESS.

The Canadian Public Health Congress, which was held in Edmonton June 13th, 14th, and 15th, was largely attended and evidenced a continued interest in the important subject of Health betterment in every portion of the Dominion. The Congress, which was sponsored by the Canadian Public Health Association, and the success of which was made possible for the attendance of those interested in the prevention of Tuberculosis and its spread, and those interested in Social and Mental Hygiene, held its sessions in the buildings of the University of Alberta.

Owing to the attendance of the members of the Canadian Association for the Prevention of Tuberculosis, the Canadian Social Hygiene Council, and the Canadian National Committee for Mental Hygiene, it was decided this year to dispense with the sectonal meetings and encourage the gathering together of all those present at joint meetings, at which every phase of public health activity would be taken up, and thus stimulate the discussion of the subject presented by those perhaps not directly interested in that particular phase of preventive medicine.

The session held on the morning of June 12th was under the leadership of Sheriff Cook, of Regina, President of the Canadian Association for the Prevention of Tuberculosis, and Dr. R. E. Wodehouse, the Executive Secretary of that Association, and much that was of interest to all present resulted from the papers given and the discussion which followed. The papers of Dr. Torrance and Dr. D. A. Clark, both of the Federal Department at Ottawa, were particularly interesting, and added much to the knowledge of those present on both the question of Bovine Tuberculosis and Health of Emigrants. The afternoon session, at which Dr. Laidlaw presided, was characterized by the presentation of public health activities in which the general public were possibly more directly interested, and a large number of representatives from the local Social Welfare bodies attended. The papers of Dr. Stewart from Manitoba, Savard and Baudouin of Quebec, and Bell of Toronto, were exceedingly interesting, especially those from the Quebec members which showed the keen interest which is being taken in Child Welfare and Tuberculosis Prevention in Canada's oldest province. The evening meeting, which was of a popular nature, was well attended, considering the weather and the counter attractions which exist in Alberta at this season of the year, and those present were particularly fortunate as the paper presented by Dr. Parfitt, the speaker of the evening, was distinctly worth while. The sessions held on Wednesday and Thursday afternoons touched on practically every phase of public health, both Dr. Mahood of Calgary and Dr. Whitlaw of Edmonton dealing with the spread of communicable disease, while Drs. McAlister, McPhee, and Hincks presented very able papers on Mental Hygiene. The paper of Miss Frances Brown, read by Dr. Hagerty, caused much favourable comment, as did the paper of the Hon. W. R. Riddell, which dealt with the early history of specific disease. The evening meeting, held on Wednesday, at which Mrs. Pankhurst, Drs. Bates and Hagerty, dealt with the par-

ticularly vital subject of Venereal Disease, drew a crowd which taxed the capacity of the Memorial Hall.

The general business meeting of the C. P. H. A., which was held on Thursday morning, resulted in the adoption of the report of the Committtee on Policy and Progress, which called for the appointment of a full-time executive secretary and the formation of provincial or district organizations which would make possible the getting together of all those interested in public health oftener than is now existent under the present arrangements. It was decided to accept the invitation from Mayor Martin, of Montreal, to hold the next annual meeting of the Association in that city at a date to be decided by the new executive, and while all those who are fortunate enough to have been present at the 1923 Congress, felt much indebted to Dr. Laidlaw and the local committee for the exceedingly enjoyable and profitable time spent in their city, even better things are hoped for at the 1924 conference under the presiding hand of Dr. J. A. Baudouin.

Dr. Parfitt, of Toronto, was selected President of the Canadian Association for the Prevention of Tuberculosis, Dr. Wodehouse continuing as Executive Secretary, while the officers of the C. P. H. A. are as follows:

President—Dr. Baudouin, Montreal.

Vice-Presidents—Dr. Porter, Toronto; Mrs. Pankhurst, Toronto.

Secretary—Dr. Phair, Toronto.

Treasurer—Dr. Hagerty, Ottawa.

Notes on Current Literature

(From the Health Information Service, Canadian Red Cross Society):

Child Welfare in Canada.

The Federal Department of Health has recently issued a handbook on child welfare work in Canada. Copies may be obtained on application to Dr. Helen MacMurchy, Chief, Division of Child Welfare, Department of Health, Ottawa, Ontario.

Bibliography on Child Health.

A list of references to the literature on child health has been issued by the National Child Health Council. Copies may be obtained on application to the Canadian Red Cross Society.

Home Conditions and the Intelligence of School Children.

The British Medical Research Council has issued a report on the relation between home conditions and the intelligence of school children. This report analyzes the connection between ability and educational attainments and the home conditions under which the children live.

Infant Mortality.

A series of papers given before the Canadian Council on Child Welfare on the methods of reducing infant and maternal mortality in city and rural areas.

Infant Mortality.

The United States Childrens' Bureau has recently issued publication No. 112 on the results of a field study in infant mortality in Gary, Indiana.

School Health Supervision.

A section from the forthcoming report of the Committee on Municipal Health Department Practice of the American Public Health Association. "American Journal of Public Health," April, 1923, page 259.

Antenatal Syphilis.

The Federal Department of Health has issued an abstract of literature on antenatal syphilis and the treatment of syphilis during pregnancy. Copies may be obtained on application to the Deputy Minister, Dept. of Health, Ottawa, Ontario.

Mental Hygiene.

"The Canadian Nurse" for April, 1923, contains a description of mental hygiene from the standpoint of the social nurse, by Miss Ida L. Lawrence, of the Canadian National Committee for Mental Hygiene, Montreal.

Conservation of Vision.

Practical facts that every sight conservation teacher should know. By M. B. Beals, M.D., Supervising Oculist, Bureau of Child Hygiene, New York State Dept. of Health. "School Health News," February, 1923, page 1.

Tuberculosis in Childhood.

A non-technical address presented at the Tuberculosis Conference in New York City in October, 1922. "New York Tuberculosis Association Bulletin," March-April, 1923, page 1.

What Nurses Should Know About Tuberculosis.

By Dr. J. C. Cummings, Carpenteria, Cal. "The Pacific Coast Journal of Nursing," April, 1923, page 207.

Posters on Public Health Nursing.

The National Organization for Public Health Nursing, 370 Seventh Avenue, New York City, has issued a set of 12 posters illustrating the work of the public health nurse. Cardboard, 9 in. by 12 in.

Social Hygiene Pamphlets.

The American Social Hygiene Association, 370 Seventh Ave., New York City, has issued an outline of three lectures on sex-social education for parents and teachers. These lectures comprise:

(a) The Need, Nature and Scope of Sex-Social Education.
(b) Methods for Sex Instruction of the Adolescent.
(c) Methods of Handling Sex Problems of the Young.

CANADIAN RED CROSS REPORTS.

The following Provincial Divisions have recently issued reports on the work of the past year. Copies may be obtained on application to the Divisional Officer:

Quebec—45 Belmont Park, Montreal, Que.
Ontario—410 Sherbourne Street, Toronto, Ont.
Saskatchewan—2331 Victoria Ave., Regina, Sask.

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The Public Health Journal

TORONTO **CANADA**

STATE MEDICINE **SANITARY REVIEW** **HEALTH PROGRESS**

The Official Organ of the
Canadian Public Health Association
and of the
Ontario Health Officers' Association

DR. GORDON BATES
Editor

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HON. DR. FORBES GODFREY, M.P.P.
Minister of Health and Labour for Ontario

The Public Health Journal

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Research on Mental Hygiene

By E. D. MacPhee, University of Alberta, Edmonton, Alberta

THE subject chosen for this paper is so indefinite that it seems advisable to preface it by an introductory statement which will indicate, in outline, the topics to be considered.

The mental hygiene movement has made very considerable progress in Canada. One of the best indications of this is the fact that it does not seem necessary or advisable to submit to the Canadian Public Health Association a plea for the general encouragement of research in mental problems. This paper, on the contrary will point out certain specific lines of research, which are of most immediate moment in the development of a hygiene program. I am sorry to say that my own work in Alberta is so introductory that it is not possible to present to you the conclusions of any piece of research. I shall have to content myself with outlining to you some of the steps now being taken in Alberta to promote Mental Hygiene, and in this connection I shall make more specific reference to the functions which the University will probably assume.

We shall consider, then some specific problems on which nation-wide research is needed at the present time; problems on which we are, as yet, some distance from a final conclusion. May I remind you, at this point that research in mental hygiene is in an unique position. It has evolved in conjunction with the sciences of psychiatry and psychology, neither of which has reached that stage of development which makes it possible to define our problems with definiteness and precision which obtains in the natural sciences. As soon as one starts to investigate the causal factors in some disorder, e.g., dementia praecox, one finds it impossible to proceed until some more unanimity is reached with regard to the

types of disorders which should be grouped under that concept. The specific problem seems to evade definition and isolation. In the second place one must remember that mental hygiene had its origin, in part, in the well-intentioned, but often ill-informed efforts of philanthropists of the last century, and that some of the tenets of mental hygiene are yet untested hypotheses, rather than demonstrable facts.

Let us turn to a few specific examples. We are very far yet from any unanimity as to what is meant by "mental deficiency", "dementia praecox", and other fundamental concepts. The law has a standard for deficiency, and a concept of insanity, which differ at times, quite radically from those which are held by biologists and psychologists. Society at large employs yet a third standard. The fundamental question for us is this:—are these conditions, or more specifically, is mental deficiency a biological concept, solely, or must we introduce other and vaguer concepts, as supplementary to the biological one? As long as there are unknown and unmeasurable elements in our total concept, it is obvious that our diagnosis, prognosia and therapy must suffer. Or let us take an even more concrete question. "Is it true that 'once a mental defective, always a mental defective'?" Such therapeutic measures as are known to-day force us to consider the condition to be almost always irremediable. The sole exception is cretinism, in which condition thyroidine if given early enough, may provide some considerable alleviation. Psychologists hold out no hopes of relief from psychotherapy. A few of the endocrinologisis, notably Sajous, regard mental deficiency as due directly to degenerative disorders in the ductless glands; in large part to an inherited deficient activity of the glands—which results in the breaking down of cerebral neurons and the accumulation of eudogenous toxins. One investigator claims a close relation between idiocy and thymus deficiency. A large number assert that severe disturbance of the endocrine system unfailingly leads to more or less marked criminal, immoral and antisocial behaviour. If these assertions can be justified then we may hope that the biochemist will ultimately be able to remedy many cases of secondary amentia. The same is true of some psychoses. Dr. Lessing of Berlin contends that dementia praecox is a polyglandular eudocrine disturbance; Sajous that it is due to a decreased action of the thymous gland in early puberty.

But as one American has said: "The only note of optimism in gland therapy to-day comes from manufacturers and agents of

glandular products". In the Michigan Training School for Mental Defectives extensive experiments with glandular treatment have demonstrated its failure except in borderline cases. The same conclusions were reached in Vineland, where pineal gland extract was extensively used. All that we may say to-day is that the biochemist must be called in, in the future, to assist in our problem.

2. One of the most important scientific and social problems of to-day is concerned with the relation of alcohol to mental disorders. At the end of last century it was generally accepted that alcohol could and did, in the absence of all other causal factors, produce mental deficiency. The theory of Weismann has been almost universally adopted to-day, and has been interpreted to mean that alcohol could not affect the spermatazoa, and that its action was only in the developing foetus. Let me point out that Weismann stated expressly his opinion that alcohol may damage the germ plasm; an assertion which most students of Weismann have overlooked or ignored, probably because they found it difficult to reconcile the two positions; Weismann himself found no difficulty, and contended that while the spermatazoa might be affected, yet such effect would not be transmitted. Most students of Weismann claim, however, that paternal alcoholism, per se, cannot produce mental deficiency, and the majority subscribe to the position, so clearly enunciated in this country by Goddard, that alcoholism is an indication of a neuropathic diathesis, which of course may be hereditary, and may show itself in the offspring as mental deficiency. Alcoholism is then to be considered, not as a cause, but as an effect of mental deficiency.

Let us look at the history of the problem. Sir Victor Horsley, Dr. Sturge, and Dr. Saleeby in England, Bertholet in Lausanne, and Weichlesbaum in Vienna, all concluded that alcohol could produce hereditary mental disorders. In 1918 the chairman of the Liquor Control Board in England appointed a Committee composed of Professor Sherrington, Sir Frederick Mott, Professor Cushny and Professor McDougall to enquire into the effects of parental alcoholism on the young. They carried out extensive investigations, and concluded that: "These observations and experiments would appear to indicate that parental alcoholism may have a seriously detrimental influence on the stock." They asked, however, that action be deferred until independent investigators had worked on the problem. Stockard working on guinea pigs, MacDowell working on white mice, and Kostitch working on human beings have dis-

covered confirmatory evidence for the thesis of this committee, viz., that alcohol is a race poison, and has a detrimental influence on the offspring.

On the other hand, Dr. Karl Pearson has published a statistical enquiry, in which he reaches the opposite conclusion. Dr. Pearson's investigations are open to serious criticism, and cannot be taken as giving any finality.

Evidently the whole problem of the relation of alcohol to mental abnormality is far from being settled, and it is one on which scientists cannot yet speak with any degree of finality.

3. In the next place we need extensive investigations, carried on over a considerable period of time, to discover whether mental disorders are increasing, and if so, what factors are tending to produce this condition. All hygiene workers are persuaded that there is a constant increase, but are unable to substantiate their belief, because such surveys as are made are too local, and of too brief duration. One fact which affords strong a priori evidence that such a condition should be found is the radical change in our treatment of the social misfits a century ago in England. There were over two hundred offences for which a man might be hanged. I am aware that many judges evaded the law, but the fact remains that then as now, the mentally abnormal were potential criminals, and that the defective strains were in great part eliminated by the stringency of the laws. The present situation is a direct outgrowth of the humanitarian movement; one that could not be foreseen, but one which is, without a doubt, creating a situation for which society has at the present time, no remedy.

Another group of problems arises out of this very situation. Rightly or wrongly there is a popular opinion that sterilization has unfortunate physical and mental effects. The extent of these is unknown to-day, but we must face the fact, that there is a considerable body of public, and even professional opinion against it. This is evidenced in the United States. Legislation allowing sterilization, has been enacted in fifteen states. In five of these it has been declared ultra vires, on the grounds that it was class legislation, inasmuch as it was applicable only to institutional inmates, and that it constituted a second punishment. Further evidence of the antipathy is to be found in the fact that prior to 1921 there had been only 3,233 persons sterilized in U.S.A. for eugenic purposes. About two-thirds of these moreover were in one state. I am not expressing an opinion on the merits of the case; I am simply

pointing out the fact that much research is needed to establish the physiological and mental effects of this process, before the populace can be convinced.

We need to know whether certain social stocks are producing an undue quota of mentally handicapped and mentally diseased. The survey by the National Committee on Mental Hygiene in the Province of Alberta showed that while Canadian born contributed 55 per cent. of the normal expectancy for their incidence in the general population, that the British Isles contributed 150 per cent. and Europe 170 per cent.

The same facts have been discovered in the United States. It may assist you if I present you the facts in tabular form. The population was divided into four groups on the basis of the last national census.

Class A. Native born, both parents native born.
" B. Native born, one parent foreign born.
" C. Native born, both parents foreign born.
" D. Foreign born.

Alongside of these are placed the numbers which each class has contributed to the insane and feeble-minded population thus far discovered. If each group contributed according to its population, the designate would be 100 per cent. or normal. A larger percentage denotes a greater proportion from any class.

	Feeble-minded	Insane
Class A.	88.08%	64.34%
" B.	198.18	124.39
" C.	174.63	106.18
" D.	32.72	239.25

Dr. H. H. Laughlin, of Washington, to whom I am indebted for these statistics, draws the following conclusions:—

1. Recent immigration is keeping out the large number of mental defectives (Class A) but is not keeping out the stock which produces mental defective persons (Classes B & C).

2. Immigration is letting in a large number of people who became insane (Class D).

There are considerable differences between the laws of U.S.A. and of Canada with regard to immigration, but we are in dire need of some more detailed information as to the extent to which these conditions are coming to pertain in our own land. One general position seems fairly clear, on the basis of American statistics;

it is evidently impossible to select desirable immigrants on the basis of an individual examination alone, and without reference to the family stock.

Another type of statistical investigation is urgently needed in this same connection. I know that the causes of crime are multitudinous, and that even the causes of suicide are multiform. But one fact stands out very clearly in psychiatry; that a very large number of suicides and attempted suicides are committed by persons suffering from some mental disease. The Canadian Criminal Statistics are the only source of information of which I know in Canada, and they deal of course, only with attempted suicides. They give us absolutely no information on the point of the race incidence of this offense. It is true that they have four or five racial classifications, but they group all continental Europe under one heading. Yet the incidence of suicide in Saxony is four times that of England, six times that of Scotland, and eighteen times that of Spain. These facts mean, I think, two things. We need much more detailed information with regard to the behaviour of the various races who seek admission to our shores, and secondly we need very specific information with regard to the immediate family histories of the applicants.

Let us turn now to the second problem. Here I wish to consider with you, briefly the steps proposed for the solution of some of these questions in Alberta, and shall devote my attention chiefly to the part the University of Alberta proposes to play in this work.

You are doubtless aware that all questions of mental hygiene in this Province come under the direct supervision of the Minister of Public Health. The Province has very excellent facilities for the care of the insane, and has inaugurated a programme for the care of Mental Defectives under the superintendency of Dr. W. H. MacAlister. About a year ago the Senate of the University of Alberta appointed a Committee to enquire into this problem, and to suggest the functions which the University could legitimately and wisely assume in furthering mental hygiene. This committee proceeded with the cognizance and co-operation of the Department of Health, and reported to the Senate in May of this year. This was adopted by the Senate unanimously, and its recommendations may be summarized as follows:—

1. The University should assume responsibility for the educational aspects of the problem, that is to say, for the training of those who are qualifying for special work in one or other of the

various problems of mental hygiene. We are now offering courses in Abnormal Psychology, Mental Deficiency and Neuroses to our third year medical students, and we are proposing to offer a course in Psychiatry during the coming year to fifth year students. This will be followed by clinical work in the sixth year. For two years we have been giving evening courses to teachers in Psychology and Education, a part which entails training in psychometry. As a direct outcome twenty-five city teachers are now being qualified to undertake this work. The industrial aspects of Mental Deficiency are treated in a class in Industrial Psychology. Further we instituted one year ago a class in Legal Psychology, one purpose of which is to familiarize the legal profession with the biological point of view of mental disorders, and thus to bridge the gap which exists between the point of view of many jurists, and of physicians who are called to give expert evidence. The role of mental disorders in the causation of crime is also treated and illustrated with actual case studies.

2. The University will co-operate in every way possible with the officials of the Department of Public Health, and will assist in making provincial or local surveys if requested to do so by the Superintendent of Mental Deficiency. We regard Dr. McAlister as the person on whom the responsibility for this work must fall, and consider that all steps for the forwarding of this cause must be with his full sanction and support. We consider that the Department of Public Health, or whatever governmental body is charged with that problem, is the organization which should correlate all the efforts of the Province in the prosecution of mental hygiene.

3. The Senate has approved of the recommendation for the establishment of an out-patient clinic in connection with the University hospital. If this clinic is established, it will probably undertake complete examinations along the lines which are in use in the Waverley Institution, in Waverley, U.S.A. Cases could be referred to this clinic by physicians, teachers, nurses, judges, supervisors of children's homes and so on. No details are available at present, with regard to this clinic. The University does not consider, however, that it is warranted in establishing travelling clinics.

4. It is expected that the University will offer a six weeks' Summer School Course in psychometry, to be open to practising physicians, advanced medical students, and teachers who possess special qualifications for such training.

5. The University is prepared:—

(a) To undertake the publishing of bulletins on questions related to mental deficiency, and mental hygiene in general.

(b) To undertake extension lectures on mental deficiency, with a view to the education of public opinion on this matter.

6. The presence of a considerable number of graduate students —chiefly school Principals, Supervisors and Inspectors, in the classes in Psychology has provided us with an unusual opportunity for the carrying on of research work in various problems of mental hygiene. We are anticipating some years of thorough research work in psychometry with this group.

In conclusion I wish to indicate yet another task that lies before us in the Province of Alberta, and to state on whom the onus or responsibility seems to lie. There is a great body of field work to be done, and speaking as an individual, I am persuaded that the medical profession and probably the teaching profession are the persons to whom we must look for the primary steps. It is possible that there are in Alberta, already, families who are about to repeat the history of the Kallikaks, the Nams and the Jukes. A friend of mine in Nova Scotia, a physician, drew my attention to a family who are already well on the way to rivalling that dire story. Some one should know of these cases; some one should investigate these cases, and only by the co-operation of all those qualified for the task can we hope to render that immediate service which every mental hygiene problem demands.

The Schick Test and Active Immunization Against Diphtheria

By Dr. James Roberts, M.O.H., Hamilton, Ontario.

Read at the 1923 Convention of the Ontario Health Officers' Association.

CERTAIN observations which would be accepted with but little reserve by most public health officials who have had experience in dealing with epidemics of diphtheria, may at the outset be made.

(1) There is a steadily increasing case incidence though the case fatality is diminishing.

(2) The morbidity and mortality is high and constant in spite of the almost universal use of antitoxin for curative and prophylactic purposes.

(3) Present epidemiological methods of detecting the mild cases which appear to be so important a factor in the spread of epidemics have fallen far short of being an enthusiastic success so that the statement of Jacobi made in 1884 is still too true.

"The symptoms are often but few. A little muscular pain and difficult deglutition, are all perhaps that is complained of. Women will quietly bear it; men will go about their business. There is as much diphtheria out of bed as in bed; nearly as much out of doors as indoors. Many a mild case is walking the streets for weeks without caring or thinking that some of his victims have been wept over before he was quite well himself."

(4) Present methods of isolating carriers of either temporary or more permanent types have failed in accomplishing the practical results that were to be anticipated considering our laboratory knowledge of the specific organism.

(5) No satisfactory measures have been developed in effecting the disappearance of such casual organisms from the noses and throats of those harbouring them in virulent or avirulent form.

The above considerations which represent, I believe, fairly accurately the present day attitude of sanitary authorities in relation to preventive measures against diphtheria, must of necessity create in the minds of those familiar with the fatalities from this disease a lively and active interest in the possibility of a permanent im-

munization of our child population against it, by the administration as at present advocated of the toxin-antitoxin mixture.

More than a quarter of a century has elapsed since the first attempts to produce active immunity in animals by a mixture of toxin and antitoxin. Previous to this, toxin injections had been utilized for the production of large amounts of antitoxin for use in bringing about a condition of passive immunity as a temporary protection against infection. Ehrlich's experiments on the development of antibodies led up to the work of Behring and Kitasato on the effect of injecting the toxins of diphtheria and tetanus. Animals in which the formation of specific antibodies could be stimulated were found to be immune to these diseases. Following upon this it was found that horses injected frequently with toxin accumulated antitoxin in such large amounts that a few c.c. of blood contained an amount of antitoxin which when transferred to human beings was sufficient to immunize them against infection from diphtheria. Experience has demonstrated that immunity brought about in this way lasts for a period of two or three weeks and can be re-established or prolonged by a second injection of antitoxin, which subsequent injection confers an immunity of a week to ten days.

In certain species of animals the blood contains as a natural constituent substances apparently identical with diphtheria antitoxin. In such animals not only can repeated injections of toxin in moderately large quantity be administered with comparatively short intervals between the injections but the response to the stimulus of the toxin is quickly indicated in the production of large quantities of antitoxin. Animals possessing no natural antitoxin are slow in the making of antitoxin and in addition reveal a marked susceptibility to the poisonous action of the toxin.

The facts above indicated are utilized in a practical way in the choice of animals to be selected for laboratory purposes and are also of some significance in interpreting the results of a repeat Schick test in certain groups of children to whom as a result of a positive finding several months previously, two or three doses of the toxin-antitoxin mixture have been given with the usual intervals between.

To the pioneer experimental work of Ehrlich, Park, Wernicke, Theobald Smith, Von Behring,Hohn and Sommer between the years 1893 to 1913, is due our present knowledge with respect to the active immunization of animals by the use of toxin, while the more recent investigations of Park, Zingher, and Schroeder of New York

regarding natural and active immunity in diphtheria and their studies of the Schick test as a clinical test for determining diphtheria immunity, have aroused widespread interest in the test and the subject of toxin-antitoxin administration as a means of diphtheria control.

The chief difficulty in the prevention and control of diphtheria epidemics has been the detection of so-called carriers and the placing of a reliable estimate on their ability to infect. The possibility of the clinically mild or missed cases has probably been insufficiently stressed by many of the best authorities.

At the time of its original application as a method for the discovery of foci of infection the simple method of swabbing the nose and throat and waiting for a positive or negative opinion from a bacteriologist appeared in the eyes of public health administration the essence of simplicity. Negative findings in contacts indicated absence of danger; positive findings on the other hand necessitated precautions, restrictions, loss of time for longer or shorter periods in the case of persons from whom they were obtained.

These earlier conclusions have in a large measure been disproved by the frequency of the carrier condition and by the distinction which is known to exist between organisms of virulent and avirulent types; such types being culturally and morphologically indistinguishable. During the winter season more than one per cent. of our city populations harbour morphologically typical diphtheria bacilli. In other words there are in my home city during the winter months more than twelve hundred persons carrying such bacilli; in some cases a few days; in others a few weeks. This estimate is very conservative; it will be noted in the 1923 Health Almanac, issued by the Provincial Board of Health, in referring to diphtheria that "At times when there is an unusually large number of cases in a community the carrier rate may run as high as eight to fifteen per cent." To discover and isolate such numbers of persons is manifestly absurd and entirely out of the question. From an administrative standpoint it would be the height of folly to remove a healthy carrier to an isolation hospital during the peak of an epidemic where he would occupy a bed to the exclusion of those needing treatment. A healthy school child who is found to be a carrier may merely have acquired the condition in common with others during a diphtheria outbreak; his bacilli may be virulent or non-virulent; he may or may not constitute a danger to others. It is well to remember also that the results of swabbing

are materially affected by the character of the swabbing and the method of examination in the laboratory. Other limitations in the control of diphtheria and consequent lessening of the death rate are; delay in reporting cases; delay in culturing suspects; failure to recognize seriousness; delay in administration of antitoxin, and complications of the disease.

It is claimed by Park, Zingher and others who have conducted extensive studies and investigations bearing on the value of the Schick test and methods of producing active immunization against diphtheria that the new method of immunizing persons susceptible to this disease promises to virtually wipe diphtheria from the community if the aid of the private physician can be secured. It is therefore to be sincerely hoped that continued experiment both in the laboratory and in the field will result in further endorsation from authorative sources of this definite procedure in the prevention of diphtheria and that it will prove equally effective as vaccination in the control of Smallpox.

The Schick Test.

The Schick test is a clinical test by means of which we can estimate the antitoxic immunity of an individual and by which their susceptibility or non-susceptibility to diphtheria can be determined from a local skin reaction. Only those individuals contract diphtheria who possess no antitoxin in their blood or tissues. According to Schick in order to prevent the appearance of the reaction at least 1/30th unit of antitoxin per c.c. of blood is required. He considers this amount will protect against diphtheria.

Experience has shown that the blood of persons recovering from diphtheria or possessing the so-called natural immunity contains not less than 1/30th unit of antitoxin per c.c. Von Behring states that 1/100th unit of antitoxin will protect against diphtheria in uncomplicated cases. Persons with less than 1/30th unit per c.c. of antitoxin in the blood will show a positive reaction when injected with the amount of toxin used in the Schick test. The test consists in injecting into but not under the skin of the flexor surface of the forearm 0.2 c.c. of a freshly made dilution of standardized diphtheria toxin of full strength. Practice is necessary in getting the needle inserted into the proper layer of the skin. As a control a similar amount of the original solution previously boiled in order to destroy the toxin is injected into the opposite arm. The reaction

first makes its appearance at the end of twenty-four hours, but an accurate reading requires the lapse of ninety-six hours. Zingher advises that a final reading of the test should not be made before the fourth or fifth day.

The Schick test readings at the end of twenty-four hours are classified as follows:—by Zingher.

(a) A slight or moderate redness on the right or test forearm with no redness, on the control forearm—*positive.*

(b) No redness on either arm—*negative.*

(c) An area of redness on both forearms equal in size and similar in appearance—*a negative pseudo reaction.*

(d) An area of redness on both forearms but unequal in size, the one on the right side being larger—*a positive combined reaction.* The final readings of the test, at the end of five days were classified into three groups (a) *positive,* was indicated by a well defined red area on the test arm and no redness or pigmentation on the control arm, (b) *negative pseudo,* if a fading brown or reddish brown more or less diffuse area of pigmentation equal in size and of similar appearance was present on both arms, (c) *positive combined* if there was present a typical positive reaction on the right forearm and a faded pseudo like reaction on the left.

Time will not permit in a short paper, a reference in detail to the interesting variations in susceptibility to diphtheria among school children as revealed by the Schick test nor more than a mention of family, race, and environment as factors in the evaluation of results. Park found susceptibility to diphtheria in different age groups in the following proportions:—

Age.	Susceptible
Under 3 months	15%
3 to 6 months	30%
6 to 12 months	60%
1 to 2 years	60%
2 to 3 years	60%
3 to 5 years	40%
5 to 10 years	30%
10 to 20 years	20%
Over 20 years	12%

Toxin-Antitoxin Immunization.

Active immunity can be induced in more than 95 per cent. of individuals susceptible to diphtheria by toxin-antitoxin injections.

This immunity takes considerable time to reach its maximum. The length of time varies between 2 and 6 months; it is desirable therefore that the active immunization be arranged for as far as possible in periods between epidemics.

Immunization is carried out by the administration of three doses of standardized mixture of toxin and antitoxin each containing 1.0 c.c. at intervals of one week. A longer interval between the injections allows the local reaction to disappear more completely before the next injection is given and elicits a better antitoxin response in some cases. A repeat Schick test should not be made until six months have elapsed after the first series of toxin-antitoxin injections. Those in whom the first series of injections have not produced an immunity should be given a second series of injections. Infants show little or no constitutional disturbance as a result of the toxin-antitoxin administration; children up to ten slight reaction; while children over ten and adults in fifty per cent. of cases show considerable redness and swelling with more or less definite clinical symptoms lasting from twenty-four to seventy-two hours which may require confinement to bed.

Diphtheria toxin-antitoxin contains in addition to the neutralized toxin protein substances derived from the media in which the bacilli are grown and from broken down or digested bacilli. It is the intolerance of the individual to these substances which gives rise in certain cases to excessive reaction. Recently experiments by Park tend to establish the fact that an amount of toxin equal to about one-thirtieth of that in the former preparation used for immunizing purposes gives equally good results with removal largely of these disagreeable reactions. This knowledge should assist materially in popularizing the use of the toxin-antitoxin.

Some practical applications of the Schick test and active immunization in diphtheria prevention may be noted.

(1) The records of isolation hospitals indicate that nurses and others brought into frequent and close contact with diphtheria cases often contract the disease; especially is this the case among younger nurses and those from rural communities who are exposed to the disease for the first time. The Schick test and active immunizing of all susceptibles likely to become exposed should minimize the possibilities of diphtheria occurring among the staff of hospitals.

(2) Park calls attention to 400 cases of Scarlet Fever isolated in a hospital to whom no immunizing dose of antitoxin was given

because of their showing a negative Schick. Not one developed clinical diphtheria although many were carriers of virulent K. L. bacilli.

In the Williard Parker Hospital, New York, 1,200 Scarlet Fever patients were tested of whom 46.3% gave a negative reaction. None of the negative reactors although in contact with clinical diphtheria developing among the positives showed symptoms of diphtheria. Twenty per cent. however became carriers of the K. L. bacilli, which in many cases were of virulent type.

(3) In an orphan asylum at Des Plains, Ill., housing 1,200 children from 3 to 12 years; Dr. C. A. Earle states that more children have been lost from diphtheria during the last thirty years than from all other diseases and injuries combined.

Five years ago the work of immunization against this disease was commenced. Eighty-five cases with seven deaths had occurred in the six months preceding the inception of the work. During the five years there have been five cases in children giving a positive Schick with no deaths. Three thousand six hundred doses of toxin-antitoxin have been given with no unpleasant results other than an arm abscess in two instances.

The history of our own work in Hamilton might be of interest. In January, 1922, a clinic was established in the Health Centre, where suitable facilities were available for such work. Our own bacteriologist, Dr. W. J. Deadman undertook the labor involved assisted by other medical practitioners.

As many as 50 children would attend the clinic in a single day. The attendance of these was the outcome of the daily routine home visits of the public health nurses.

The Board of Education was asked to co-operate, and its consent was obtained to carry on this work in the public schools, and through the help of the school Medical Officer, Dr. J. E. Davey, the work was greatly facilitated.

Dr. Deadman has prepared a report, giving the number of persons treated since the establishment of the clinic in Hamilton; very instructive information is contained in the report which is as follows:

"The initial step taken was a general talk to the teachers of the school on the principles and value of diphtheria immunization. This was followed by the distribution to the children of a descriptive pamphlet and a permission slip. These the children were asked to take home for the information and consent of the parents or guardians. When signed these permission slips were brought back

to school and collected by the teachers and passed on to the Health Department nurse. From these, triplicate rolls were made; the children being grouped according to classes. One roll was kept at the Department, one was sent to the Principal of the school, and one was used for checking at the time of the performance of the test. These rolls were found to be of great value in handling the children, as by this means confusion and delay were reduced to a minimum. I cannot speak too highly of the co-operation and assitance afforded us by the Principals.

On the day decided on for the Schick test a room previously chosen was prepared with due reference to the principles of asepsis. The doctors worked in pairs, one applying the actual test, and the other applying the control test. The arms were in the meantime, being prepared with ether by the nurse. In this way with the services of four doctors and five or six nurses, it was possible to apply the Schick Test to as many as 400 children in a little over an hour. Five days after the application of the Schick Test all the arms were inspected and all those showing positive reactions were given their first dose of Toxin-Antotoxin. For this injection the arms were prepared with Iodine. The remaining two doses were administered at intervals of one week.

In all a total of 1,780 Schick re-actions were performed. Of these 688 or about 40% were positive. Six hundred and seventy-one were given the complete course of three injections, the balance receiving one or two injections. A certain number of the latter will be completed in time. In 41 children a complete course of three injections was given without having a Schick Test. One hundred and sixty-five children under the age of 5 were immunized.

It is interesting to note that the children from the poorer districts gave a lower percentage of positive reactions and especially those from the districts where diphtheria is most prevalent. In one school, out of 203 children, only 36 gave a positive reaction. This is no doubt due to the widespread immunity acquired by frequent contact with the disease.

We have had no serious re-actions following the administration of the Toxin-Antitoxin. We have had three children who gave negative Schick reactions contract diphtheria, one of whom died. We have had one immunized child contract a mild attack of diphtheria. These cases are in my opinion due to infection by a Diphtheria Bacillus of exceptional virulence, against which the immunity present was not quite sufficient.

Dr. Park of New York City in his report on the incidence of diphtheria among 90,000 immunized school children as compared with 90,000 other school children did not find that the incidence was entirely abolished but that it was reduced by 75%, which is really a splendid result.

In conclusion I would like to mention especially the valuable services rendered by Dr. G. R. Farmer, Dr. J. C. MacGregor and Dr. A. T. Eaton, and also Miss Boyd and her staff of nurses without which the work could not have been carried on. I am adding a table showing the number dealt with."

TABLE OF RESULTS.

Place.	Schick Readings. (Over 5 years).	Positive Schicks.	Completed Treatments.
Murray St.	99	26	26
Fairfield	203	36	31
Memorial	465	233	201
Queen Mary	363	157	153
Health Centre 1922-23	650	236	260
	1,780	688	671
Children under 5 treated			165
Total treatments			836

The number of children who have received the injections up to the present is too small to enable us to draw any conclusions of value. We are outlining plans for undertaking the immunization of children of both school and pre-school age upon the immediate opening of classes in September.

It may be interesting to note that among the total of those receiving treatment, there were 19 reactions worthy of notice. Of these two were local, seventeen general; fourteen reactions were in children over eight years, five in children under the age of eight. All were confined to bed for about forty-eight hours. The highest temperature recorded was 103° F. in a child nine years of age. Symptoms:—rise of temperature, vomiting, headache, languor, and in some cases diarrhoea.

"Vital Statistics"

BY S. J. MANCHESTER, *Director of Vital Statistics, Registrar General's Department, Ontario.*

IN presenting at a convention of physicians, especially concerned in Public Health, a paper dealing with certain important aspects of Vital Statistics it is scarcely necessary to stress their importance. In public health work, as in any other line of human endeavor it is necessary to know whether our effort is making good or is fruitless. The only method by which an estimate of the degree of success attending our efforts can be made is by an analysis of the results obtained. The only method making an analysis is through statistical data compiled thereon. Statistical data is not compiled to give the central administration of the Public Board of Health only, an index of Public Health progress, but also to be of assistance to the individual practising physician, to show him by results obtained, the route by which efforts on his part, individually, as on the part of the profession on the whole, will obtain the best results, in the light of present day scientific knowledge. This paper is presented for the purpose of bringing home to you once more a realization of your obligations as individual physicians, especially Public Health physicians, in respect to efforts on your part with regard to co-operation for successful compilation, that the resulting information may be correct and available.

I shall not detail further the advantages which accrue from registration of births, marriages and deaths. These are well known, but I should like to dwell particularly for a few minutes on two points. I refer to the Physician's Notice of a Birth and the Medical Certificate of Death.

Under The Vital Statistics Act every physician who attends a birth must give notice of the fact within forty-eight hours to the Registrar of the Division in which the birth occurred. Many physicians do not agree with this requirement, thinking the time for notification too brief or the obligation too compulsory. It is an indisputable fact, however, that when we are left to choose our own time, almost invariably we lapse into carelessness: physicians are no exception to the rule and many fail to give any notice of a birth whatever, when left to their own devices. It has been demonstrated

beyond the shadow of a doubt that without the strict enforcement of this provision of the Act by the Department and its equally strict observance on the part of the practitioner the number of births registered falls far below the number which actually occur.

The object of the Physician's Notice is to notify the Division Registrar that a birth has occurred in his municipality. When the physician has despatched this notice he has done his duty. As physicians and officers of health you are urged to observe this requirement, without exception and without excuse and use your influence with your conferes if you know them to be at all careless.

Regarding the Medical Certificate of Death, I wish to draw your attention to the unsatisfactory causes given in hundreds of cases. These are usually given in cases of sudden death where no physician was or had been in attendance and embrace such statements as "Heart Failure," "Visitation of God," "Natural Causes.," "Respiratory Failure," etc., which are of no statistical value, as they fail to make a definite statement as to real cause. It is presumed that such returns are made because there does not happen to be any visible evidence of a traumatism, foul play or gross pathological condition and yet, such causes appearing on a death certificate usually mean nothing more than that the physician making the return is taking the easy way out of the situation, and gives a cause calculated to allow the burial permit to issue with the least possible trouble. It is human nature to take the easy way, but it is not good business and has a bad effect on the value of mortality rates. You are urged to guard against meaningless expressions in stating causes of death.

Other unsatisfactory causes which your minds might be directed to are "drowning," "death from traumatisms due to firearms," or "to cutting or piercing instruments," "blows," etc. A large number of these are unsatisfactory because not described as homicidal, suicidal or accidental. The physician who fails to describe any of these causes more fully, seems to infer that the cause will be assumed to be accidental unless otherwise mentioned. Enquiry, however, reveals a sufficient number of such cases to be either homicidal or suicidal to make them worthy of proper description in all cases, leaving nothing to be assumed.

"Septicaemia," "Fractures," etc. are also very unsatisfactory unless described as to cause of such septicaemia or fracture.

Still other frequent unsatisfactory causes are "operation," "surgical shock," and also "from anaesthetic." These are entirely indefinite and unsatisfactory—unless the surgeon desires his work

to be held primarily responsible for the death; in which case he might simply sign his name as the primary cause of death!

The disease or form of external violence, should be named in such cases. In the case of deaths of infants under one year of age the cause of death is returned in many instances as "Convulsions" or "Fits," which refer to symptoms and not to causes. Many certificates give the cause of death as "Stomach Trouble," "Dyspepsia," "Indigestion," "Gastritis." The Manual of Classification issued by the English Office objects strongly to such a classification. The Department is compelled to ascertain the real cause in all such cases as well as in those resulting from accident, already referred to.

Wherever pregnancy or parturition has been the cause of death or a contributory cause of death, the fact should be mentioned on the certificate. Diseases resulting from childbirth or miscarriage should always be qualified as puerperal; e.g., puerperal septicaemia, puerperal peritonitis, etc.

The Department, along with Dr. Bell of the Child Welfare Branch of the Provincial Board of Health, is making special investigation into maternal mortality. It is believed that the result of the investigation will show the true death rate from maternal deaths to be from 50% to 100% greater than the rate based on the Medical Certificates issued by the physicians at the time of death. This is mentioned as an example of the manner in which a death rate may be correct or otherwise, showing that it depends wholly on the interpretation of the physician's statement as to cause.

	Total	Remaining	Reclassified	
Septicaemia	50	28	22	44%
Peritonitis	23	17	6	26%
Fractures	66	3	63	95%
Ill defined	70	49	21	30%

A word about still-births. There is a growing demand for physicians and others interested in birth rates—infant and mater mortality rates, etc.—for information regarding still-births and attention should be given to the matter. It is a vexing question statistically. No consideration is taken of still-births in any rates of births or of deaths published, although the Department has always endeavored to have as complete a record of still-births as possible. According to the Act "A child which is not alive at the moment of birth shall be deemed to be a still-born child," and a physician who attends at the birth, is required, to issue a Notice of the Birth and a Medical Certificate of Death. The former re-

quirement was more often honored in the breach than in the observance. Up to 1921 there were invariably more still-births registered as deaths than as births. During 1921 this was reversed for the first time. Of the total number of still-births registered 84% were registered as births and as deaths; 9% as births only and 7% as deaths only, a slight excess of still-births registered as births only.

This seems to be a good place to mention viable age or to try to satisfy the enquiry, "when should a premature birth be registered?"

In the absence of any definite rule the Department has made it a practice to consider seven months as viable age. If, therefore, a birth occurs before seven months and is a still-birth, it need not be registered as a birth or as a death. If, however, the child has breathed, it should be considered a birth without regard to period of gestation and treated accordingly.

Regarding Primary and Secondary Causes of Death. These terms seem to be confusing or not understood by a considerable number of practitioners.

By "primary cause of death" is meant (in the case of deaths from disease) the disease, present at the time of death, which initiated the train of events leading thereto, and not a mere secondary, contributory, or immediate cause, or a terminal condition or mode of death.

Acute specific diseases, if of recent occurrences, are to be considered as primary causes of death, even though the actual disease as tested by power of infection, be no longer present at the time of death, e.g. measles (primary) five weeks; broncho-pneumonia (secondary) ten days.

A terminal condition or mode of death should not be entered as a secondary (or contributory) cause. In a very large proportion of instances the statement of the primary cause gives all the information required; in these cases nothing is gained by adding as a secondary cause such a condition as syncope, heart failure, coma, exhaustion, etc. Thus a certificate of pulmonary tuberculosis is not improved by the addition of "exhaustion" as a secondary cause, though if a complication such as "pneumothoras" has supervened this should be noted as a contributory cause of death.

The Department publishes the International List of Causes of Death in a vest pocket form. This list is sufficiently comprehensive to include all causes to be met—and yet not too great to be memorized by use—and if used by medical practitioners conscientiously

—these same practitioners would have, when required, reliable mortality statistics.

One more point. Let me speak of something more personal and which I trust will not injure any person's feelings—I refer to handwriting. Will you please take into your consideration the fact that those whose duty it is to register deaths and those whose later duty it is to check them over in the Department are persons usually not too familiar with the names and synonyms of Causes of Death. Add careless handwriting to this unfamiliarity and error is bound to result. Will you please take this into consideration and write in a manner which you yourselves would be able to decipher three months later, if necessary?

I do not know if you are aware of the fact but, by arrangement with the Federal Government all original returns of births and of deaths are sent to Ottawa for compilation, so that Dominion statistics may be compiled for comparison with other countries. Ontario has, so far, set the pace in vital statistics and in matters of Public Health in Canada and it is desired to make our statistics comparable with and as dependable as any such statistics in the world. It can be done only through the co-operation of our medical practitioners.

In conclusion, what has been said is not said to or for you alone. Will you please bear in mind the points touched on, or as many of them as you can, and pass them on at your county or local meetings in the hope and expectation that better returns will result. I thank you for your attention.

Ottawa Social Hygiene Council

REPORT OF SEMI-ANNUAL MEETING.

The Ottawa Social Hygiene Council held its first semi-annual meeting at the Chateau Laurier on Friday evening, May 4th, 1923, when about 50 people were present. In the absence of the President, Dr. Chabot, Mrs. J. A. Wilson, vice-president, presided, opening the meeting with a few suitable remarks.

After the reading and adoption of the minutes of the first meeting of the Council, the secretary's report was read by the Hon. Secretary, Dr. G. H. J. Pearson. Much appreciation of this report was expressed by members of the Council present and it was moved by His Lordship, Bishop Roper, seconded by Colonel Irwin and unanimously carried that the Secretary's report should be published in the local press. Dr. Gordon Bates of Toronto, who was present, stated that he would have much pleasure in arranging that the report be published in the PUBLIC HEALTH JOURNAL.

The Treasurer's report was then submitted by the Hon. Treasurer, Mrs. H. S. Campbell, a copy of which is attached herewith.

Mrs. Wilson explained that the office of President, owing to the ill health of Doctor Chabot combined with his many professional duties, was now vacant; also that the Council felt it desirable to strengthen the organization by the election of three or four new vice-presidents. She then asked for nominations of President.

His Lordship, Bishop Roper, nominated and moved the election of Rt. Hon. Sir George Foster as President, the motion was seconded by Mrs. Smillie and unanimously carried. There were no other nominations for President.

Mrs. Van Veen nominated and moved the election of Dr. Chabot, Mr. Chas. Hopewell, Mr. J. O. B. LeBlanc, Mr. J. A. Machado, General MacBrien, Sir George Perley and Mrs. J. A. Wilson as Vice-presidents of the Council. The nominations were seconded by Miss Baudry and unanimously carried.

It was then moved by Mr. Machado and seconded by Mr. J. A. Wilson, that the following members should comprise the General Committee: Mrs. Smillie, Bishop Roper, Colonel MacKinnon, Captain Haydon, Miss Baudry, Mrs. VanVeen, General Ashton, Staff-Captain Layman, Mr. W. E. Houghton, Dr. Moffat, Mr. R. A. A. Johnston, Mrs. Kennedy, Mr. H. P. Hill, Colonel Irwin, Mr. Karl

Conger, Mr. R. G. Cameron, Mr. Norman Wilson, Mr. Thomas Blair, Mr. J. J. Allen, Mr. Taylor, Rev. Fr. Paquet, Dr. de Haitre, Colonel Edwards, Judge McKinley; Honorary Secretary, Dr. G. H. J. Pearson; Hon. Treasurer, Mrs. H. S. Campbell; Executive Secretary, Miss Hazel Todd, with power to add. Unanimously carried.

The newly-elected President, Sir Geo. Foster, was then asked by Mrs. Wilson to take the chair. The President then gave a short address expressing his interest and desire to promote the work of the Council and thanked the Council for the honour conferred on him. The President then appointed a Business Committee to be composed as follows:

General MacBrien, Mr. Machado, Mr. J. J. Allen, Mr. T. Blair, Colonel Edwards, Mr. N. F. Wilson, Captain Haydon, Judge McKinley, R. G. Cameron, Colonel Irwin and Mr. W. E. Houghton, with power to add. —Approved.

The President then asked the Hon. Sec'y., Dr. Pearson, to read the programme of work he had prepared for the Council.

Dr. Pearson submitted the prepared programme (included in Secretary's report attached herewith) and asked for further suggestions. Mrs. Wilson proposed that the programme be accepted. Dr. Pearson proposed that this suggestion might be amended to read that the Programme be approved, but referred to the Business Committee for approval of financial expenditures involved. Bishop Roper seconded this amendment and the recommendation was unanimously carried. The motion was adopted. The President then announced that he wished to be considered a member, ex-officio, of all committees in order that he might be quite cognizant of all procedures.

The President then asked Dr. Bates to give an address. Dr. Bates expressed pleasure in being in Ottawa again. He reported progress in other cities and told of the very successful trip he had recently had to New Brunswick with Dr. Heagerty and Mrs. Pankhurst. He gave a description of the drive in Toronto for 5,000 members. He spoke of the necessity for the Social Hygiene Council, the problems to be dealt with and the infinite opportunities. He closed his remarks by congratulating the Ottawa Council on its organization and upon securing Sir George Foster as President.

The President then asked Dr. Heagerty to speak. Dr. Heagerty related several anecdotes pointing out the prevalence of venereal diseases and the necessity for dealing immediately with the problem which he said is growing as rapidly as the drug habit. "Char-

acter, Knowledge and Protection," he said were "the chief factors to be used in solving the problem" and pointed out the necessity for everyone to get together to protect the youth of the country. Dr. Heagerty closed his remarks by paying high tribute to Dr. G. H. J. Pearson, the Honorary Secretary, for the excellent work accomplished in so short a time, as, through his efforts, the Social Hygiene Council was better known in Ottawa than in any other cities except Toronto and Hamilton.

A hearty vote of thanks was moved by Mr. Machado and seconded by Colonel Irwin to Dr. Heagerty and Dr. Bates for all they had done in Ottawa. The motion was unanimously carried. The meeting then adjourned.

HAZEL TODD,
Executive Secretary,
Ottawa Social Hygiene Council.

Semi-Annual Report Social Hygiene Council

OTTAWA, ONTARIO, MAY, 1923.

The Ottawa Social Hygiene Council was formed on September 14th, 1922, when Dr. Gordon Bates, the Federal Secretary, visited Ottawa and met a small number of people interested in the work of the Council. An inaugural meeting was held the next day, and, at a fairly representative gathering, the Ottawa Council was formed, the reasons for and aims of such an organization discussed, and officers elected.

It might be advisable to review briefly the situation which the Council seeks to eradicate and the means necessary to that end. The appalling number of persons infected with syphilis or gonorrhoea, first brought to the attention of the public by war, though such conditions had existed for many years, impressed upon thinking people the necessity of vigorous measures for the extermination of these diseases. The prosecution of such a campaign, as was inaugurated by the Social Hygiene Council of Canada, meant the consideration of various phases of the problem.

First: The situation in regard to those persons already infected. To deal with these, free diagnostic and treatment centres have been established by the Government in the larger cities, where expert advice is available to those unable to afford private treatment. Laboratories have been established that provide, without charge, the more technically difficult scientific procedures necessary to correct diagnosis and treatment. Special efforts have been made to instruct medical men in modern diagnostic methods and treatments. The two diseases have been made notifiable and severe penalties enacted for those who persistently refuse to take the necessary treatment to render them non-infectious. This phase has been dealt with in a very efficient manner by the Federal and Provincial Governments, aided by the medical profession.

Second: The prevention of those at present non-infected from acquiring the diseases. This phase of the campaign is largely educational and has been considered under three aspects:—

(*a*) The situation in regard to the present generation of adults.

(*b*) That in regard to the present adolescent population.

(*c*) The next generation.

For the present generation of adults, educational measures

dealing with the existence and ravages of these diseases, their early recognition and the importance of early and sufficient treatment, a proper understanding of sexual matters, as related to a normal healthy life, and a destruction of the veil of secrecy that has clouded the free discussion of these topics.

For the adolescent, instruction in the anatomy and functions of the reproductive organs, the unnecessariness of incontinuance, a knowledge of the marital state, the necessity of purity in mind and body, and a knowledge of syphilis and gonorrhoea, particularly as to the avoidance of infection and the importance of early and sufficient treatment.

For the next generation, instruction of parents in the upbringing of children, with special emphasis on the importance of proper training in sex matters and the inculcating of reverence for the opposite sex and for sex topics.

Combined with this, the desirability of substituting for many doubtful forms of recreation indulged in at present, proper recreation, normal mingling of the sexes, and a clean, healthy attitude of mind. This second phase is the work that the Social Hygiene Council desires to do.

To acquaint the public with the formation of the Council, a general meeting, which filled the Russell Theatre, was held on December 1st and was addressed by Dr. J. J. Heagerty, of the Federal Department of Health, Mrs. Pankhurst and Dr. Gordon Bates. This was followed in a few weeks by a luncheon given at the Chateau Laurier to about 85 prominent men of the city, and addressed by Mr. Justice Riddell of the Dominion Council and Dr. Gordon Bates.

A large number of organizations were asked to include in their programme a talk by one of our speakers; and to supply speakers for such, a Speaker's Committee was organized. To meet those cases where organizations desired a woman speaker, Dr. Heagerty prepared an outline talk and instructed the women who kindly consented to aid us in this matter as to the proper methods of dealing with the subject.

Over 1,500 people belonging to the smaller organizations have been reached by eight of our speakers in thirty meetings. The Executive desires to thank the Federal Department of Health and Dr. Heagerty, the Provincial Department of Health and Miss Moore, Mrs. J. A. Wilson, Mrs. Hannington of the V.O.N., Mrs. VanVeen, Mrs. Smillie and Dr. McKay for their services in this connection.

As the Executive Committee had become unwieldy it was decided to resolve it into a General Council and appoint a smaller and therefore, a more efficient Executive. A number of the members of the original Executive were elected to compose a Medical Aspects Committee to confer with Dr. Heagerty, Dr. Lomer, City Health Officer, and Dr. de Haitre of the Free Clinic as to the most efficient manner that the Council could assist the Department in carrying on its work. As the assistance at the Free Clinic is inadequate, representations were made to the Red Cross Society for financial aid which they very generously granted to the extent of $1,000, $500 of which was given to the Clinic to pay for adequate help on the condition that at least one night clinic per week be established, for it was felt that there were many infected persons whose occupations prevented them attending for treatment during the day. The other $500 was applied to our educational campaign among the unorganized young men and women. An open meeting for men only, illustrated by a film, had been held in the Regent Theatre in February but was not attended by much success owing to lack of finances prohibiting proper advertising. With the grant from the Red Cross a more extensive advertising scheme was adopted and on Sunday, April 22nd, Dr. Heagerty addressed an audience of about 1,700 young men in the Regent Theatre, nearly half as many more were turned away. On Sunday, May 6th, Dr. Ranger of the Department of Health of the Province of Quebec, gave a French address to another such meeting of about 1,400 and also spoke to the Federation des Femmes Canadiene Francais in the afternoon.

In order that the work might be endorsed by the clergy and important civic organizations, a private showing of one of our films was given in the Auditorium through the courtesy of the Y.M.C.A. to the Ministerial Association and about sixty other men, representatives of various important organizations, and received their unqualified approval.

Altogether over 5,000 people have received instruction through the efforts of the Social Hygiene Council in Ottawa.

It has been decided to distribute free to members of the local Social Hygiene Council all suitable literature published by the Canadian Social Hygiene Council.

The following programme for the next six months has been prepared and submitted to the Executive and approved.

1. Miss Moore for one week with new film and slides for women.
2. Two Exhibits for men only, one English and one French.

3. Exhibit in conjunction with Provincial Health Department at Autumn Exhibition, and possibly at rural fairs.
4. One French and one English meeting for men during the summer.
5. Speakers to be supplied to boys camps during the summer.
6. Arrangements to be made with all organizations to include in next winter's programme one Social Hygiene meeting. Meeting dates to be arranged before the autumn.
7. Arrangements to be made with Trades and Labour Congress to have Social Hygiene on programme at one meeting of each organization next winter and to be included in Workingmen's educational course.
8. Arrangements to be made with technical school for inclusion of one Social Hygiene talk with Home Nursing Class, and, if possible, with other classes.
9. Arrangements to be made with Medico-Chir, for one meeting on syphilis and gonorrhea, illustrated with either slides or films and covering diagnosis, treatment and public health aspects.
10. Arrangements for lecture on V.D. to each training school for nurses.
11. Arrangements to reach young men and young girls employed in stores and factories, etc.
12. A Committee on Medical Aspects to work out, with assistance of clinics, methods of reaching young girls and young men already diseased and their friends.

It was decided to appoint a programme committee, who, during the summer would consider a definite plan of campaign for the coming winter, this plan of campaign to be submitted at the next semi-annual meeting. To assist them the Hon. Secretary desires to offer the following suggestions to be included in next winter's work:—

1. Courses of six introductory studies on Social Hygiene.
2. Three men's meeting in French and three in English.
3. Two exhibits for men only.
4. One large general meeting.

There have been several hindrances which have prevented a more efficient working of the Council, namely, the incompleteness of the organization and the lack of funds. For some time the Council laboured under the disability of having no full-time secretary, but with the appointment of Miss Todd a very much greater measure of efficiency was obtained; this appointment was financed

through the kindness of the Dominion Council. Dr. Bates has kindly consented to endeavour to remedy the other two disabilities mentioned, and it is believed that by following the scheme he has evolved the Council will be able to do justice to this work. Might I recommend to the Federal Executive that when a new Council is formed in a community, someone with experience in organizing, such as Dr. Bates, remain in that community for a week or ten days to build up the primary organization? In this manner others may not suffer the same inconvenience that the Ottawa Council has.

The Executive desires to thank the Red Cross Society and the Messrs. Southam for generous subscriptions and co-operation; Col. Parkinson of *The Journal;* Mr. Gautier of *Le Droit;* the editor of *Le Courier Federal;* Mr. Gordon, of the Chateau; the Local Council of Women; the management of the Regent and Francais Theatres; the Levey Sign Co.; Mr. Hutchinson of the Y.M.C.A.; Mr. Pennock of the Post Office; Mr. Peck, Dept. of Trade and Commerce; Major Topp; Miss Hall, Patriotic Fund; Bank of Montreal, Hull; Bank of Montreal, corner Somerset and Bank Streets; J. A. LaRoque, Bank National, Dalhousie and St. Patrick Streets; Mayor and citizens of Hull; with many other citizens of Ottawa who have generously assisted and co-operated.

The above report is respectfully submitted for the approval of the Council.

(Signed), G. H. J. PEARSON, M.D.,
Hon. Secretary O.S.H.C.

OTTAWA SOCIAL HYGIENE COUNCIL.

REPORT OF TREASURER—SEMI-ANNUAL MEETING.

May 4th, 1923.

RECEIPTS.

72 General Membership fees	$ 73.00
5 Sustaining Membership fees	25.00
Collections at two public meetings	134.10
Cheque from Dr. Bates	119.43
Ottawa Red Cross Society	500.00
The Southam Brothers	300.00
Mr. A. C. Ross, of Ross-Meagher Co.	20.00
Total receipts to date	$1,171.53

EXPENDITURES.

The Modern Press, 3 accounts	$ 84.10
Ottawa Electric Railway, for card space twice	14.00
Journal and Citizen, advertising coming events	8.80
To Dr. Pearson for sundry accounts paid by him	45.15
Miss Todd for petty cash, 4 cheques	55.00
To Regent Theatre for two meetings	50.00
The Levey Sign Co., poster	3.50
Sampson Office Service, for printing	2.20
Treasurer's book, 2 receipt books and stamps	4.40
Total expenditures to date	$267.15
Leaving a balance in the Treasury of	$904.38
Total expenditure	267.15
	$1,171.53

Outstanding accounts about $300.

(Signed), MARTHA H. CAMPBELL,
Honorary Treasurer, O.S.H.C.

Recreation for Women and Girls

By Miss A. F. Hodgkins.

(*Continued from July issue*)

It behoves the state, the employers and the public-minded citizens to take an interest and some worth-while action in this matter. We should have dormitories in larger numbers, built on a small scale that they may be as near like a home as possible, and where the person in charge will have an opportunity to know her girls.

Furthermore, rooming houses should be licensed, and regularly inspected to prevent overcrowding, poor sanitation and immoral conditions.

Another situation that concerns us is the condition under which the girls and women work. The great mass of girls work in homes, or in factories where the work for the most part is drab and monotonous. Thousands of the girls in factories spend their days performing the same operation over and over again for 8 to 10 hours, as the case may be. Arthur Pound, the author of the "Iron Man," tells a pathetic story illustrating the specialization in industry today, especially in the automobile industry. As the chasis moved along the ways in the automobile factory, each worker was given so many seconds to add his part. An old man who for many years had been accustomed to adding a half turn to part No. 87, lay dying, and when his family asked him if he had anything to say, replied: "Well, I suppose it's too late now, but all my life I've wanted to give the other half turn to part 87 and finish the job." Even the common man desires to see his work completed. There is no chance for initiative in the modern factory, the mass of people are only feeding machines, and as soon as a machine can be invented to take their place they will have to seek other fields. Edison says that the day is not far distant when we will put the cotton into one end of the machine and the finished garment will come out the other with buttons all sewed on.

With each improvement in machinery production is speeded up and the hours of work become shorter and shorter, which means of course more leisure. What are we going to do with this increased leisure. As one authority cites the case, "the problem of the 20th century is not the creation of wealth, the 19th century has taken care of that for us, neither is it the conservation of natural re-

sources or the distribution of wealth for these are not possible without an educated people. Our problem is the proper utilization of the leisure time of the people for only in that way will it be possible to produce an educated people capable of solving these vast problems. What are we filling our leisure time with at present? Again we quote Arthur Pond who says, "For want of facilities and training in play we are in danger of becoming a nation of bleacherites. Like Greece and Rome in their decline, we sit and gaze upon the professional athlete in the arena and the professional dancing girls on the stage. Vespasian built the Colisume that all Rome might bleacherite, and three hundred years later the barbarian hordes crashed through to sack a dissolute Rome." We must attemp to solve this leisure time problem for our workers in two ways, first by seeing that the girls work under ideal sanitary conditions, in well heated, well lighted, and well aired rooms, so that the girl finishes her work with a minimum of fatigue, for the tired girl with jaded nerves craves only the most exciting kind of recreation. Second, we must provide for the leisure hours of the worker by having the playgrounds lighted at night and supervised. The school centres open where the girl may learn all kind of trades, like millinery, dressmaking, designing and so on, and have an opportunity of attending the gym and swimming pool, and indulging in the interests that were formed in childhood. Industrial concerns are coming to see that it is worth considerable to production that the workers have proper recreation provided, and many have established clubs and camps to care for their employees winter and summer. Primarily, I believe that the problem of establishing recreation facilities for young and old is essentially a city problem and should be as much a part of the city budget as the streets department. We should have city dance halls run and supervised by the city, not private persons, whose first consideration is the monetary gain not the morals of their patrons. Let us not make the mistake of devoting all our thoughts to the girl outside, the girl in our house, the maid is of primary consideration. The fact that Dr. Bates tells us in his report that 41% of the girls who went wrong were domestics, points to a lack on some one's part. We need home missionaries in this field as in every other.

I hope I have not seemed to deviate too far from the subject of Social Hygiene. I have tried to tell you some of the factors which I have found to have done much in preventing our youths from going wrong. In our enthusiasm to cure these horrible diseases may we not forget to spend some of our time, and money in protecting those

who have thus far not stepped aside from the path of virtue. We must not reach the place where the good boys and girls appear uninteresting, let us bend some of our energies to keeping them clean and good.

Lastly, what would a programme of recreation such as I have briefly sketched cost? We're always so concerned about the dollar these days, especially when it applies to any preventive or curative measure. We seem to have enough money to spend on everything else. In the United States, we are spending at present about $10,000,000 a year on playgrounds and recreation centres, or .10 per capita. Curtis estimated that a system which would be at all adequate would cost about ten times this amount of $1.00 per person. Against this figure we are spending nine hundred million on tobacco, two billion on alcohol, and crime costs us six hundred million. Jay Nash, the recreational director of Oakland, California, furnishes us with these figures for the cost of commercial recreation: Movies. 30, baseball .35, dances $1.50, pool .60, bowling .75, theatres $1.25; for similar periods these are the figures for play: Tennis .7, baseball .8, swimming .10, volley ball .3, golf .25, drama .4, apparatus play .1. In Oakland they are spending .34 for playgrounds, .36 for parks per capital as against $21.85 for commercial recreation, and $12 per capital for the prison system. Surely these figures give us something to thing about? No wealth or science can save a people from decline when the amateur spirit has gone completely to seed. Are we in danger?

News Notes

The Canadian Social Hygiene Council have undertaken a new species of summer propaganda in Northern Ontario, during the summer months. Three speakers, Mrs. Emmeline Pankhurst, Mrs. R. A. Kennedy, President of the Ottawa Women's Club and a member of the Executive of the Ottawa Social Hygiene Council, and Miss Estelle Hewson, Secretary of the Social Hygiene Council for the Province of Ontario, have started out in a Ford car, planning to cover approximately fifteen hundred miles and to deliver lectures and distribute literature in a large number of places. Reports have already been received which would seem to indicate that the tour is meeting with marked success. Addresses to date have been given in: Barrie, Severn Bridge, Bala, Royal Muskoka Hotel, Lake Rosseau, Monteith House, Parry Sound, Huntsville, Magnetewan, Sundridge, Powassan, North Bay, Little Current, Mindemoya, Sault Ste. Marie.

It is hoped that a full description of the tour will appear in an early issue of THE JOURNAL.

Dr. F. G. Banting will officially open the Canadian National Exhibition on August 25th, 1923.

The Canadian Council on Child Welfare meets in Winnipeg on September 11th, 12th and 13th.

The Canadian Social Hygiene Council is planning an extensive campaign during the coming Fall and Winter. There are now about fifty branches of the Canadian Council in existence.

The Ontario Board of Health will have an attractive exhibit this year at the Canadian National Exhibition. The central idea of the exhibit will be the health of all the members of the family, and how the various Divisions of the Provincial Board are contributing to the health and welfare of infants, children wage-earners and the general public.

One of the booths will visualize a family group at home—healthy and happy, and the other booths will show the individual efforts being put forth to maintain good health among all classes of the community.

The whole exhibit will be well worth one visit or many.

Dr. G. C. Brink, late of the D.S.C.R., has recently been appointed Clinical Specialist in Tuberculosis to the Provincial Board of Health, Ontario.

It is the intention of the Board to have a travelling clinic, which will materially assist doctors throughout the Province in the early diagnosis of tuberculosis.

ONTARIO

The Provincial Board of Health of Ontario

In the matter of an application under the Public Health Act (Chapter 218, R.S.O., and Amendments), by T. L. McRitchie, M.D., M.O.H. for the City of Chatham, before Ward Stanworth, Esq., County Court Judge, in Chambers.

DECISION.

Section 52 of the Act provides: "Where a Medical Officer of Health claims that the salary paid to him is not fair and reasonable, he may apply, etc., for an order allowing his claim and fixing the amount payable to him as salary or remuneration," and this hearing came on before me on June 27th.

After hearing all the witnesses, and evidence adduced by the solicitor for the Medical Officer of Health and the solicitor for the City of Chatham, I find as follows:

That the duties of the Medical Officer of Health for the City of Chatham have been increasing from year to year during the late period of years. I find that the regulations under the Public Health Act have been increased and the duties performed by the Medical Officer of Health by reason of these new regulations and changes in the Act, have become more onerous, and greater responsibility rests upon him for the duties so performed. The evidence of the Medical Officer of Health was that it takes nearly half his time in the performance of his duties, and the witnesses called, Dr. McCullough, Provincial Chief Officer of the Department of Public Health for Ontario; Dr. Bell, Medical Officer for the Township of Raleigh; Dr. Fred Hall, Medical Officer for the Township of Dover; Dr. Reed and Dr. Rutherford, all verify the statement of the Medical Officer of Health.

There was filed with me a list of all the cities in the Province of Ontario and the salaries paid their Medical Officers of Health, with the general expenses of the Board of Health and the population of each place. A comparison of this shows that the Medical Officers

of Health at Owen Sound, Belleville, Sarnia, Stratford, Niagara Falls and Guelph receive a smaller sum than eight hundred dollars a year, the amount being paid by the City of Chatham, while on the other hand, cities such as St. Thomas, Kingston, St. Catharines, Woodstock, Peterborough, Galt, Welland and Kitchener, cities about the same size as the City of Chatham, all pay more than the sum of eight hundred dollars. The tendency seems to be moving in the direction of increasing the responsibility of the Medical Officer of Health and therefore the remuneration should be greater. It is also pointed out and admitted by all doctors, that the position of Medical Officer of Health injures a doctor in the practice of his profession. The duties that he has to perform, of quarantine and condemnation are certainly unpopular to those affected and it is generally conceded by all the witnesses that this affected a doctor in regard to his income and injured his practice.

It is difficult for anyone to fix the exact remuneration for such services, and it is hard to say just the exact time required for such duties aside from his regular practice. It may vary some days to the greater part of the day while others it may require very little of his time. The Medical Officer of Health has, as an assistant, a sanitary inspector who works with him, and taking all in all, it is very difficult to fix the remuneration in a lump sum. It was urged by counsel for the City that the office should be just what anyone else would take it for. I think this is hardly fair. The Act allows a City to appoint a Medical Officer of Health and allows them to fix his remuneration, if acceptable to the Medical Officer of Health, and if not, then he has a right to apply to the County Judge to fix a fair and reasonable remuneration. It is urged also that the council should have the right to remove the officer if he is not satisfied with the salary, but the Legislature has, apparently with wisdom, provided that the removal of the Medical Officer of Health cannot be effected except with the approval of the Provincial Officers, and perhaps this is wise in view of the fact that the Medical Officer of Health might have to quarantine members of the council or persons who make his appointment, and as this is unpopular, these same parties might at once ask the council and bring it within the province of local politics for his removal. The Legislature has seen fit to protect him from this and protect the public from such conduct. However, this may be, I cannot take this into consideration. My duties are to examine the evidence and the facts surrounding all the circumstances and say what is a fair and reasonable remuneration.

I therefore find, after considering the duties of the Medical Officer of Health for the City of Chatham and the work done by him, and the evidence adduced on his behalf, and after looking at the comparison of Chatham with all other cities of or about the same size, I order that a fair and reasonable remuneration would be the sum of Twelve Hundred Dollars ($1,200.00). The increase to commence from the 1st July, 1923.

(Sgd.) WARD STANWORTH,
Judge, County Court, Kent.

Free Distribution of Insulin

THE NEW REMEDY FOR DIABETES.

The Minister of Health and Labour, the Hon. Forbes Godfrey, has authorized the following plan for the free distribution of Insulin, which is now being manufactured on an adequate scale by the Connaught Laboratories of the University of Toronto.

Insulin will be distributed free, on and after September 1st, to all patients certified by their physician as being unable to pay for the remedy. The physician will order Insulin as required from one of the eight Laboratories of the Provincial Board of Health, located at—Fort William, Sault Ste. Marie, North Bay, Owen Sound, London, Toronto, Peterborough, Kingston and Ottawa. These Laboratories will be in a position to undertake, for local physicians, any necessary laboratory work in connection with the control of the administration of Insulin. There are now about 600 physicians, who have taken a short course of instruction on Insulin treatment, given by the University and the Toronto General Hospital, and in case of emergency, any physician who is not entirely familiar with the details of the treatment, may secure the assistance of an officer of the Provincial Board of Health, who will be prepared to undertake the necessary laboratory work, for those patients who are unable to pay for Insulin.

By direction of the Minister, the Provincial Board of Health, is preparing a circular, which will be given to physicians, outlining in detail, the plan of free distribution.

Communicable Diseases Reported for the Province for the Month of July, 1923

COMPARATIVE TABLE.

	1923.		1922.	
Diseases.	*Cases.*	*Deaths.*	*Cases.*	*Deaths.*
Small-pox	14	0	40	0
Scarlet Fever	243	4	157	5
Diphtheria	225	24	159	17
Measles	1,412	11	890	7
Whooping Cough	208	20	79	3
Typhoid	58	8	92	7
Tuberculosis	188	108	144	101
Infantile Paralysis	2	1	3	0
Cerebro Spinal Meng't's	5	3	6	5
Influenza	13	7	.....	4
Pneumonia	.....	47	.....	85
Syphilis	87	.....	143	.....
Gonohhhoea	127	.....	121	.....
Chancroid	1	.....	6	.....

Notes on Current Literature

FROM HEALTH INFORMATION SERVICE, CANADIAN RED CROSS SOCIETY.

Hygiene and Home Nursing. Bulletin No. 3 of the Junior Red Cross in Canada outlines course in hygiene and home nursing for adolescent members of the Junior Red Cross. Copies of this bulletin may be obtained from the Headquarters of the Canadian Red Cross or from any of the Provincial Divisions of the Society.

The Saskatchewan Nursing Housekeeper. A pamphlet descriptive of the course for Nursing Housekeepers, conducted by the University of Saskatchewan in co-operation with the Saskatchewan Red Cross and the Saskatchewan Registered Nurses' Association. Copies of this pamphlet may be obtained on application to the Saskatchewan Red Cross, 2331 Victoria Avenue, Regina, Sask.

Summer Diarrhoea of Infants. During the summer months, cholera infantum is the cause of the death of more babies than any other disease. Dr. V. C. Vaughan's data are undoubted proof that in about six cases of seven, the death can be traced to the mother's inability or voluntary failure to nurse her child. "Hygoia," June, 1923, page 145.

A Talk on Germs. This is the second of Dr. Kleinschmidt's health talks to children, the first of which appeared in the September issue. The unanimous appreciation which met the publication of the first talk is one more proof of the fact that the health teacher, like the conjuror, needs to fascinate his audience if he would be successful. "The World's Health," January, 1923, page 22.

Indices of Nutrition. The application of certain standards of nutrition to 506 native white children without physical defects and with "good" or "excellent" nutirition as judged from clinical evidence. "Public Health Reports," U.S.P.H.S., June 8th, 1923, page 1239.

The Story of Insulin. "The Journal of the American Medical Association," for Junt 23rd, 1923, contains a special article by the Insulin Committee of the University of Toronto describing the action, value and manufacture of insulin.

What is Tuberculosis? A popular article by Dr. Edward R. Baldwin, Director of the E. L. Truleau Foundation, Saranac Lake, N.Y. "Michigan out-of-Doors," May, 1923, page 6.

Control of Tuberculosis. The prevention and control of tuberculosis in Philadelphia. "Monthly Bulletin of the Department of Public Health of the City of Philadelphia," March, 1923.

School Nurses and Tuberculosis. The duties of a school nurse in a tuberculosis programme with directions for selecting children for special examination. "The Public Health Nurse," June, 1923, page 310.

Psychology and Public Health. The application of psychology to child hygiene, industrial hygiene and other forms of public health work. "Public Health News," May, 1923, page 416.

Mental Hygiene in Industry. The practice of mental hygiene as seen by an industrial physician. "The Journal of Industrial Hygiene," May, 1923, page 1.

Safe Milk for Cities. Requisities of a safe milk supply for cities are described in a group of four articles in "Health News," April, 1923.

Sex Education. Recommended principles of sex education as advised in the recent report of the National Birth Rate Commission. "The Medical Officer," May 19th, 1923, page 242.

A new Edition of "The Canadian Mothers Book" has been published by the Federal Department of Health. Copies may be obtained free on request from the Deputy Minister, Department of Health, Ottawa. Mention whether the English or French edition is desired.

House Sanitation. The Dominion Department of Health has issued a pamphlet on sewage treatment for isolated houses and small institutions where municipal sewage system is not available. Copies may be obtained free on request from the Deputy Minister, Department of Health, Ottwa.

Deaths in Early Infancy. The past twenty years has witnessed a reduction of 50 per cent. in infant mortality. Most of this reduction is due to better baby feeding. Deaths during the first month of life show no reduction and cannot be expected to decrease until we have better prenatal care. Dr. Louis I. Dublin, in "The American Journal of Hygiene," May, 1923, page 211.

Infant Mortality. A statistical report of infant mortality during 1922 in cities of the United States, issued by the American Child Health Association.

CANADIAN RED CROSS REPORTS.

The following Provincial Divisions have recently issued reports on the work of the past year. Copies may be obtained on application to the Divisional Office:—

British Columbia—626 Pender Sa. W. Vancouver, B.C.

Nova Scotia—63 Metropole Building, Halifax, N.S.

Manitoba—187 Kennedy St., Winnipeg, Man.

Book Reviews

"Personal Hygiene Applied. By Jesse Feiring Williams, A.B., M.D., Associate Professor of Physical Education, Teachers' College, Columbia University. Cloth. $2.50 net. Pp. 412, with illustrations. Philadelphia: W. B. Saunders Co., 1922.

This book presents a comprehensive survey of health in education and education in health designed for intelligent readers, such as college students. The different phases of the health problem are dealt with in the first five chapters. The remaining ten chapters explain the methods of prevention of specific diseases and the special hygiene of the various parts of the body. The book is reliable and well illustrated.

"Rest and Other Things. By Allen K. Krause. Cloth. $1.50. Pp. 159. Baltimore: Williams & Wilkins Company, 1923.

A series of plain talks on tuberculosis problems. These should be of interest to tuberculosis workers, nurses, public health and social service workers.

Environment and Resistance in Tuberculosis. By Allen Krause, A.M., M.D., Associate Professor in Medicine and Director Dows Tuberculosis Research Fund, Johns Hopkins University, etc., Small 8vo., 137 pages. Baltimore, 1923: Williams & Wilkins Company. Price, cloth, $1.60.

The subtitle describes this little book as a presentation of the nature of environment and resistance and their relation to the pathology diagnosis, symptoms, and treatment of tuberculosis. The two essays are revisions and elaborations of articles appearing in the American Review of Tuberculosis. We are delighted that Krause has acceded to the wishes of his friends that these appear in book form. This with the companion volume *"Rest and Other Things,"* just published, uniform in size and price will interest the physician, the student, the public health worker and the layman, in that they present a summary of our present-day knowledge upon the subjects discussed. Krause has the happy faculty of interpreting the results of investigation, observation and experiment in such a way as to make the subject clear and to point out the practical application of these observations. His wide clinical experience, his

intensive laboratory training, his prolonged and searching experimental investigations, his wide knowledge of the literature, his social and economic studies, his qualifications as teacher, editor and author, make these essays not only readable but intensely interesting. His conclusions and teaching may well be made the basis of all teaching at the present time concerning these aspects of tuberculosis.

The essay on Resistance is a modern classic which no tuberculosis worker or student can afford to miss reading. It is a clear presentation of the modern conception of resistance in tuberculosis. It explains infection from without and spread from within. Immunity, allergy, reinfection, tuberculin sensitiveness are all discussed in the author's inimitable style.

Your reviewer has not written a review. He has made an attempt to valuate the book and expresses the hope that every tuberculous worker may read it and its companion volume.

Editorial

THE HON. DR. FORBES GODFREY.

IT is with pleasure that THE PUBLIC HEALTH JOURNAL announces the appointment of Dr. Forbes Godfrey, well-known physician and member for West York in the Ontario Legislature, to the important Cabinet post of Minister of Healh and Labour in the new Ferguson Government. Dr. Godfrey needs no introduction to the public health world, but in view of the importance of his new appointment this brief reference is perhaps appropriate.

Dr. Godfrey was born in the township of York, Ontario, in 1868, the son of the Rev. Robert and Mary (Elliott) Godfrey. He attended Owen Sound Collegiate Institute, graduated from the University of Toronto with the degree of M.B. and also holds degrees from Edinburgh University where he was General Proficiency Medalist and from Glasgow University. He has practised in Mimico and has been Terminal Surgeon of the G.T.R. there for eighteen years. He married Miss Mary M. Carson, daughter of James Carson, of Newbridge, Ontario, who, surveyed the site of the present City of Winnipeg in 1894.

The new Minister has taken an active part in politics for a number of years. He was first elected member for his present constituency, West York, in 1907 and was re-elected in 1908, 1911, 1919 and 1923. He has always been an outstanding figure in the Legislature, has had the courage to stand up for his convictions on all occasions and has been unique among most doctors in parliament in that he has consistently and repeatedly used his medical knowledge on the floor of the House in the interest of measures making for health. An outstanding example of this has been his advocacy of Bills designed to control feeble-mindedness and for medical examination before marriage.

While the new Minister has undertaken responsibilities which are heavy, there will be a general feeling that he is eminently fitted to grapple with the important problems which will come under the control of his department.

Dr. Godfrey has vision, enthusiasm and convictions. This, combined with scientific training and medical experience, will make it possible for him to achieve much in the public health field in

Ontario which has been hitherto impossible. The citizens of the province will look forward with confidence to the announcement of a policy which will put public health where it belongs—at the very forefront of the most important measures advocated by the Government.

On another page appears the first announcement issued by Dr. Godfrey as Minister of Health. This has to do with the free distribution of insulin to needy diabetic patients in Ontario through the laboratories of the Provincial Board of Health. Such action means that Ontario leads in being the first Province to make insulin treatment of definite value to citizens generally instead of to the few who are able to pay for this somewhat expensive remedy. Public money expended in such a way for the saving of human lives is well spent. The Minister's action augers well for the future.

THE LATE DR. GORDON BELL.

PUBLIC HEALTH WORKERS in all parts of Canada will be shocked to hear of the death of Dr. Gordon Bell, of Winnipeg. Dr. Bell, in his long career of public health work made a lasting name for himself in the history of public health in Canada. He will be remembered not only for his professional work but for a personality which made friends for him in all parts of the Dominion.

From the Toronto *Globe*:—

"Winnipeg was bereaved on August 8th of one of its finest and most widely respected medical men in the death of Dr. Gordon Bell, who since 1896 had been Provincial Bacteriologist for Manitoba. Dr. Bell was a native of Pembroke, Ontario, where he was born 60 years ago. He was educated at the Pembroke Collegiate Institute, the University of Toronto, and the Manitoba Medical College. From 1890 until 1893 Dr. Bell was Superintendent of the Brandon Hospital for the Insane, retiring to become a specialist in eye, ear, nose and throat work. Although he forsook medical practice in 1896 to become Provincial Bacteriologist, he was continually called to the assistance of Winnipeg physicians in the capacity of consultant, and in this way had a wide field of service.

Dr. Bell was very active in advancing preventive medicine in Manitoba and was largely responsible for the founding of the Manitoba Sanitarium, serving on the Executive of that institution up to the time of his death.

Winnipeg medical men, interviewed by the Manitoba *Free Press*, spoke in the highest terms of their departed colleague, while fine tribute was paid Dr. Bell editorially in The *Free Press*.

Thousands publicly showed their admiration for the doctor on August 13th, when an impressive funeral service, conducted by Rev. Dr. F. B. DuVal, was held in Knox Presbyterian Church. Floral offerings were sent by various organizations with which he was connected, including the University of Manitoba and Medical College faculties, alumni and students, the Provincial Government. the Manitoba Medical Association, and the Winnipeg General Hospital.

The deceased physician is survived by one son and one daughter. Several relatives reside in Toronto."

THE TREVETHIN REPORT.

A VERY interesting report has just been brought in to the Ministry of Health in Great Britain by the Committee of Inquiry on Venereal Diseases, under the Chairmanship of the Right Hon. Lord Trevethin. This committee was given instructions as follows:—"To consider and report on the best medical measures for preventing venereal diseases in the civil community, having regard to administrative practicability, including cost."

The committee had twenty-eight meetings and have brought in an extensive report which will unquestionably do a great deal to put an end to the unfortunate controversy which has arisen between the National Council for Combating Venereal Diseases and the National Society for the Prevention of Venereal Diseases on the matter of Prophylaxis.

While there are a number of Sections of the Report which are of interest, several have a distinct bearing on the controversy. Section 32 reads as follows:—"We think that properly and promptly applied disinfection in the case of an individual man would almost certainly prove effectual, but that so far as the community at large is concerned no sufficient case has been made to justify the introduction at the public expense of a general system of facilities either for self-disinfection or skilled disinfection, and wherever there is a limited amount of public money available, we have no doubt that the money spent on

(a) treatment of disease;

(b) continuous education of the community in regard to the nature and dangers of venereal disease and the importance of seeking prompt and skilled treatment; and

(c) the elimination of those conditions of life which tend to foster promiscuous intercourse and the spread of disease

will be money better spent than any money expended on establishing a general system for affording facilities for disinfection."

The Report also says that the law should be altered so as to permit properly qualified chemists to sell disinfectants, provided such disinfectants are sold in a form approved and with instructions for use approved by some competent authority. The Report advises against the advertisement of such disinfectants.

Other sections of the Report deal with the desirability of making patients who can afford to pay for treatment do so, and with notification. The Report states that in view of the importance of encouraging attendance of patients for treatment no compulsory step can be taken to secure payment and also adds that a modified form of notification is undesirable because of the fact that such a system tends to deter rather than encourage attendance.

The matter of payment on the part of clinic patients, one which deserves consideration everywhere and is being gravely discussed in Canada and United States, is also taken up.

With the finding of the Lord Trevethin Committee on the matter of notification health authorities in Canada will be inclined to disagree. Every Medical Officer in charge of a Venereal Disease Clinic, who has had any experience with the working of Venereal disease legislation will feel that without the aid of such legislation the proper running of his clinic and proper follow-up work, would be impossible.

The important feature of the British Report, however, is the fact that it seems to settle the controversy between the two societies. Both have passed resolutions approving of the findings of the committee and there is no doubt that in the future the two organizations will be enabled to work together towards the important end that Venereal Diseases may be eliminated.

The Public Health Journal

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Diphtheria Mortality

RUGGLES GEORGE, B.A., M.D.,

Director of Health Information, Canadian Red Cross Society.

ONE evening about forty years ago a health officer sat brooding in his study. On his knee lay open a copy of "The Arabian Nights". Even this fascinating tale gave no entertainment, for he could not get his mind off the depressing day's work he had just been through. Another epidemic of diphtheria in the town and he felt impotent to cope with the situation. "It's small comfort," he mused, "to think that over 30 per cent. of those who catch it will die. And what can I do? Would that I had Alladin's lamp!" He dozed in his chair and presently, from the shadowy corner of the room, the Genie appeared. He bowed low thrice and said, "My master would root out this evil from the people? What would he have?"

The health officer was not surprised; it all seemed quite natural. "I would have knowledge."

"The knowledge shall be given. Speak."

The health officer pondered a little. "I would know," he said, the cause of diphtheria; the way it spreads and how to tell who is liable to catch it. Above all I wish for knowledge of a sure method of prevention and treatment. Then diphtheria can be abolished."

"The knowledge is thine." The Genie bowed and vanished.

* * * * * * * * * * *

Forty years have passed. The vague dream of the health officer has become the commonplace of sanitary science. The knowledge is here—but so is the diphtheria. True that the mortality has fallen, the horror of ineffective treatment vanished, but knowledge has not meant power, at least not effective power, in abolishing this disease. The postulates have been granted; performance lags. Why the wide gap between the possession of knowledge and its effective application?

In the first place, what has been the trend of diphtheria mortality in Canada? To answer this question, information was sought of the Registrar-General of each province of Canada and of the

Dominion Bureau of Statistics. The available data are too scanty to compile a Canadian mortality rate from diphtheria for many years back, but they may serve to show what has been happening. Owing to the inadequacy of the provincial morbidity statistics, only mortality figures were asked for. Where notification is neglected, the calculation of a morbidity rate is futile and may be misleading.

Mortality in the Provinces of Canada.

A comparison of the mortality from diphtheria in the different provinces of Canada during recent years is made difficult by the wide dissimilarity that exists among the different provinces. The value of any comparison varies indirectly with the number of variable factors and in this case the variable factors are many. Climate, the type, age grouping and fluidity of population vary widely. Take, for instance, a comparison between Prince Edward Island and Alberta. The one a maritime province, long established with a slowly shrinking population; the other an inland pioneer community with a different climate, different age groupings and a population increasing with great rapidity. A death from diphtheria is a vital fact as true in one province as in another, but it is not fair to make comparative deductions when such enormous differences exist in the factors contributory to the mortality. Table I. and Fig. 1. show the mortality rates in the Canadian Provinces.

Mortality in England and Wales.

Diphtheria mortality in England and Wales since 1871 is shown in Table II. and Fig. 2. The rates prior to 1900 show a general high level between 25 and 39 deaths per 100,000 of population with sharp epidemic peaks in 1874, 1884 and 1893. The variation in epidemic tendency is undoubtedly an element of prime importance. From the time of the early investigations of Pasteur into infectious disease, it has been known vaguely that infectious diseases prevail in cycles, each cycle having its period of rise, of maximum, and of decline. The laws that govern these cycles are mainly unknown. Various attempts have recently been made to show that certain mathematical principles underlie the curves of prevalence. These charts show how very irregular the outbreaks of diphtheria are in relation to one another and in their own course.

The introduction of antitoxin in 1894 brought a striking change with the beginning of the present century. The death rate was then cut in half. The epidemic peaks still recur at intervals of about ten years, namely, in 1906, and in 1915, but they are trivial rises compared to the gigantic jumps of the previous century.

TABLE I.

DEATHS AND DEATH RATES PER 100,000 OF POPULATION FOR DIPHTHERIA IN CANADIAN PROVINCES, 1880-1922.

	Ontario		British Columbia		Quebec		Saskatchewan		Alberta		Nova Scotia		Manitoba	
Year.	Deaths	Death Rate	Deaths	Death Rate	Deaths	Death Rate	Deaths	Death Rate	Deaths	Death Rate	Deaths	Death Rate	Deaths	Death Rate
1880,	1,251	66.0	4	8.7										
1881,	1,704	88.6	2	4.0										
1882,	1,708	87.4	6	11.5										
1883,	976	49.7	6	10.3										
1884,	929	48.3	10	15.8										
1885,	1,282	64.1	10	14.7										
1886,	1,833	90.8	9	12.3										
1887,	1,786	87.6	3	3.8										
1888,	1,459	71.	28	33.7										
1889,	1,101	53.	42	45.8										
1890,	893	42.6	40	43.5										
1891,	952	45.	35	35.6										
1892,	890	41.9	*											
1893,	1,044	49.	29	25.6										
1894,	1,075	50.3	22	18.2										
1895,	942	43.9	9	6.9										
1896,	925	43.1	4	2.9	2,059	132.0								
1897,	976	44.8	*		2,088	132.0								
1898,	634	29.3	18	11.7	1,709	110.0								
1899,	599	29.	11	6.8	1,299	80.5								
1900,	738	33.	17	10.0	1,035	63.5								
1901,	772	35.3	14	7.8	858	52.								
1902,	676	30.5	33	16.7	813	48.5								
1903,	687	30.5	24	11.0	986	58.								
1904,	608	26.6	22	9.2	869	49.6								
1905,	503	21.6	14	5.3	849	47.6	23	11.1	27	22.5				
1906,	423	17.5	16	5.6	920	50.6	52	20.8	*					
1907,	380	15.9	26	8.5	577	31.1	55	18.3	27	11.2				
1908,	450	18.5	31	9.5	669	35.2	54	15.2	63	21.0	180	36.6		
1909,	430	17.5	18	5.1	515	26.8	31	7.9	*		129	26.2		
1910,	435	17.4	25	6.8	630	32.1	28	6.1	46	13.5	127	25.8	138	31.
1911,	423	16.7	68	17.4	582	29.1	58	11.7	44	11.7	110	22.4	139	29.
1912,	371	14.4	36	8.8	471	23.2	49	8.7	100	24.7	118	23.7	114	24.
1913,	339	13.0	35	7.1	539	26.	52	8.0	68	15.7	118	23.7	83	17.
1914,	443	16.7	11	2.2	654	31.	42	5.5	46	10.2	107	21.2	122	23.
1915,	341	12.6	11	2.8	658	30.8	29	4.0	39	8.2	100	19.9	105	19.
1916,	461	16.5	18	4.7	555	25.6	44	6.1	44	8.9	133	26.2	102	19.
1917,	396	14.3	19	5.0	509	23.2	101	14.1	56	10.8	122	23.8	154	29.
1918,	335	11.9	18	4.1	405	18.2	74	10.1	38	7.1	96	18.7	97	19.
1919,	475	16.5	43	8.1	452	19.8	79	9.5	41	7.5	53	10.2	104	20.
1920,	745	25.7	38	7.3	428	18.5	91	11.0	82	11.4	57	10.9	171	32.
1921,	653	22.2	33	6.3	775	32.8	173	20.9	160	27.2	63	12.0	146	26.
1922,	410	13.7	23	4.3	686	27.7	199	25.5	134	22.0	45	8.5	150	24.

* Report missing.

DEATHS FROM DIPHTHERIA IN CANADIAN PROVINCES 1910-1922

Vertical scale:—One inch equals 40 deaths per 100,000 population.

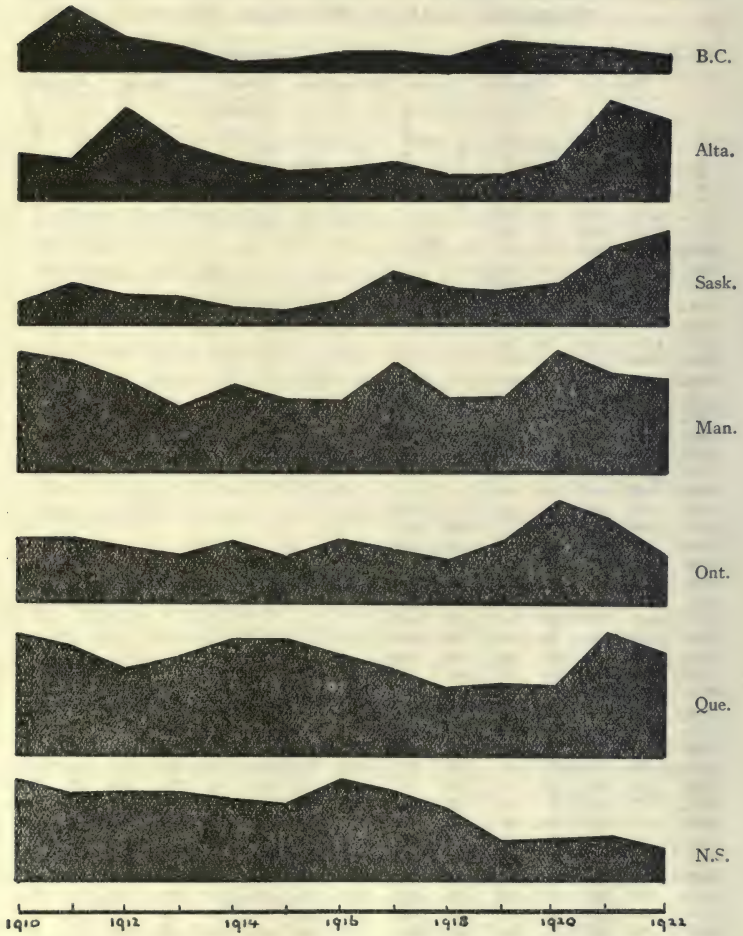

Fig. 1.

TABLE II.

DEATHS FROM DIPHTHERIA AND CROUP—ENGLAND AND WALES, 1871-1922.

Year	Ratio per 100,000 population.	Year	Ratio per 100,000 population.	Year	Ratio per 100,000 population.	Year	Ratio per 100,000 population.
1871	29.2	1884	36.2	1897	28.1	1910	12.2
1872	25.0	1885	32.0	1898	27.0	1911	13.7
1873	29.1	1886	28.3	1899	32.4	1912	11.9
1874	36.1	1887	30.3	1900	31.6	1913	12.2
1875	33.1	1888	30.0	1901	29.8	1914	15.9
1876	30.1	1889	30.3	1902	25.5	1915	16.6
1877	26.9	1890	28.8	1903	19.6	1916	15.5
1878	30.2	1891	26.4	1904	18.4	1917	13.3
1879	26.1	1892	29.8	1905	17.5	1918	14.3
1880	24.7	1893	38.9	1906	19.1	1919	13.4
1881	25.9	1894	34.9	1907	17.6	1920	15.0
1882	32.7	1895	31.3	1908	16.7	1921	12.2
1883	33.0	1896	34.2	1909	15.5	1922	11.0

MORTALITY ELSEWHERE.

A story somewhat similar to that of England is shown in the following table and charts of mortality in the United States Registration Area, in Providence, Rhode Island and in Toronto, Canada.

TABLE III.

DEATHS FROM DIPHTHERIA AND CROUP—UNITED STATES REGISTRATION AREA, 1901-1920.

Period	Ratio per 100,000 population.	Period	Ratio per 100,000 population.
1901-1905	29.6	1911-1915	17.9
1906-1910	22.4	1916-1920	14.9

DEATHS FROM DIPHTHERIA AND CROUP IN ENGLAND AND WALES
1871-1922

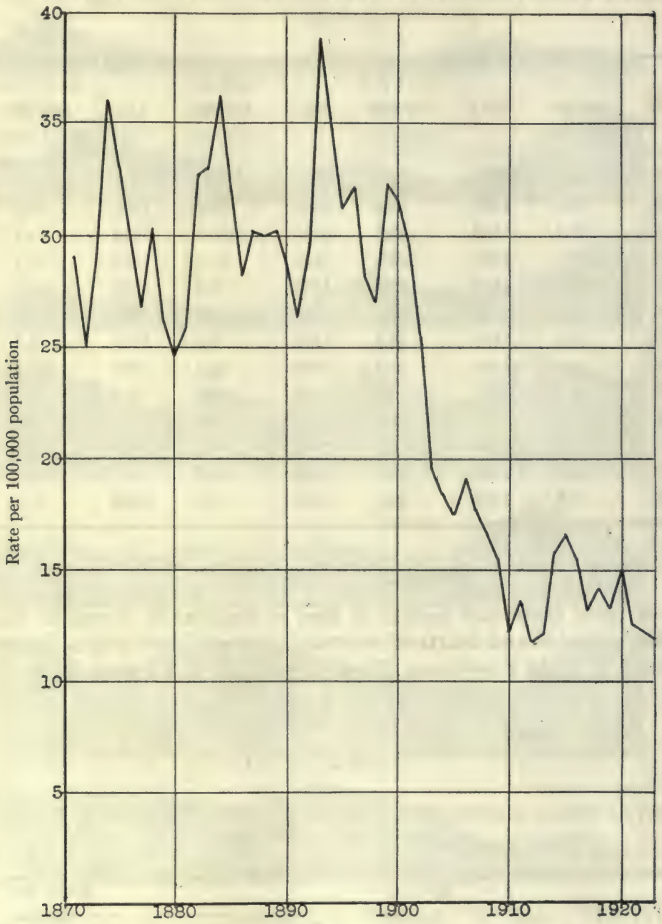

Fig 2.

TABLE IV.

DEATHS FROM DIPHTHERIA AND CROUP IN PROVIDENCE, R.I. BY FIVE YEAR PERIODS FROM 1871 TO 1905 AND ANNUALLY FROM 1906 TO 1922.

Period	Deaths	Ratio per 100,000 population.	Period	Deaths	Ratio per 100,000 population.
1871-1875	273	63	1911	55	24
1876-1880	1,035	201	1912	76	32
1881-1885	490	86	1913	70	29
1886-1890	658	104	1914	58	23
1891-1895	367	52	1915	54	21
1896-1900	393	48	1916	76	30
1901-1905	397	41	1917	80	31
1906	48	23	1918	56	21
1907	69	29	1919	77	28
1908	82	38	1920	67	28
1909	58	27	1921	18	7
1910	46	20	1922	31	12

DEATHS FROM DIPHTHERIA AND CROUP IN PROVIDENCE, R.I.
By five year periods fronn 1871 to 1905 and annually from 1906 to 1920

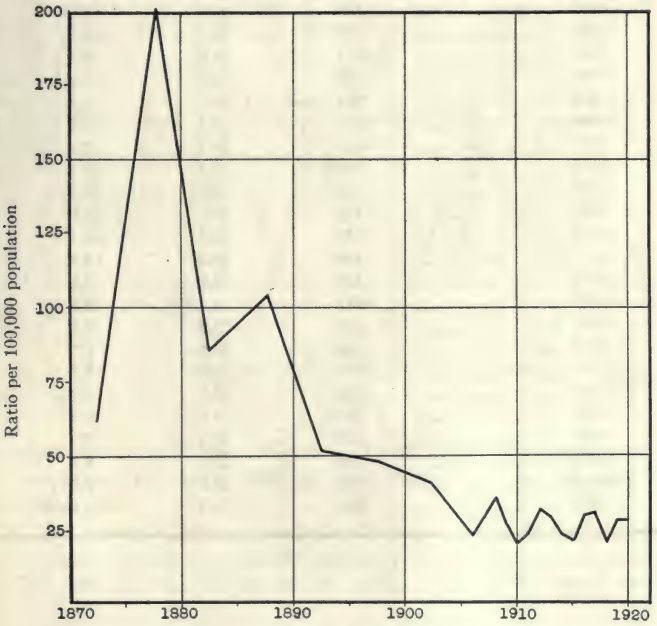

Fig 3.

TABLE V.

DIPHTHERIA AND CROUP IN TORONTO, CANADA, 1887-1922.

Year	Cases per 100,000 population	Deaths per 100,000 population	Mortality per 100 cases
1887	491	157.5	32.4
1888	346	89.0	25.7
1889	200	48.1	23.9
1890	258	49.5	19.2
1891	607	157.2	25.9
1892	912	228.8	23.8
1893	408	150.8	37.0
1894	194	63.1	33.0
1895	286	83.0	29.1
1896	312	74.2	23.5
1897	392	75.8	22.4
1898	228	33.7	14.8
1899	259	53.2	21.1
1900	490	90.0	18.4
1901	467	84.5	18.1
1902	425	55.6	13.3
1903	500	65.6	13.1
1904	581	55.2	9.7
1905	453	55.8	12.8
1906	212	25.6	12.1
1907	296	33.3	11.3
1908	451	58.9	13.1
1909	415	66.1	16.0
1910	338	45.3	13.4
1911	400	40.0	10.0
1912	326	39.0	12.0
1913	211	19.1	9.3
1914	185	17.9	9.8
1915	160	14.0	8.7
1916	271	23.8	8.8
1917	305	17.3	5.7
1918	258	19.8	7.7
1919	427	33.5	7.8
1920	440	43.8	9.9
1921	347	18.5	5.3
1922	208	11.7	5.6

The statistical returns of New South Wales show a great contrast between two periods separated by the year 1895 when antitoxin came into widespread use. From 1874 to 1894 the curves are abrupt with death rates per 100,000 of from 28 to 77. After the introduction of antitoxin the death rate declined more or less

DEATHS FROM DIPHTHERIA AND CROUP IN TORONTO 1887-1922

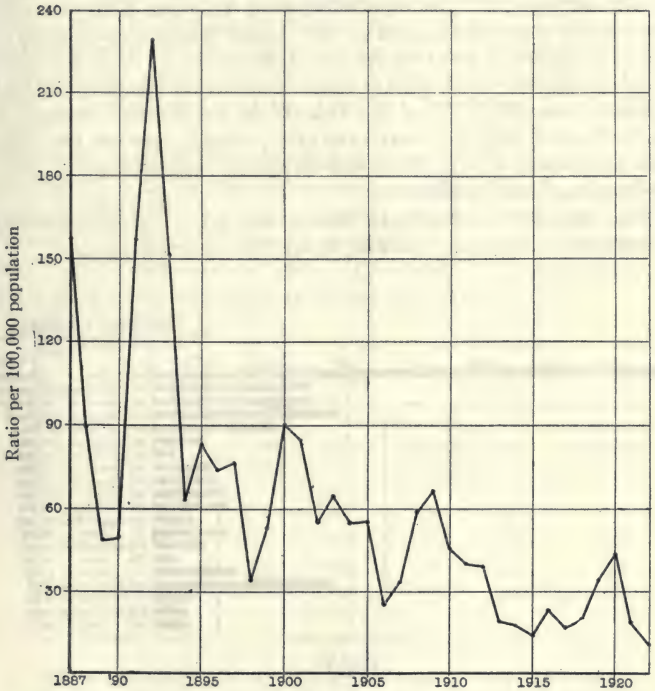

Fig 4.

steadily to a minimum of 6 in 1900, but the improvement was not maintained for, from 1906 to 1913, the rate shows an almost unbroken rise.

In Victoria there is a similar history except that the rate fell abruptly in 1893, two years before the introduction of antitoxin. This may have been due to the exhaustion of epidemic material

following a severe outbreak in 1890. Victoria showed a rise from 1906 to 1912 similar to that of New South Wales.

For each of the seven years prior to the introduction of antitoxin (1887 to 1893), the number of deaths from diphtheria in each 10,000 population unit in New York City was 14.5, whereas in the five years after the use of antitoxin became general, the number of deaths occurring yearly among each 10,000 people dropped to 6.3. In the year 1920 the diphtheria death rate per 100,000 population in the registration area of the United States had dropped to 15.3. Furthermore, prior to the use of antitoxin, 35 to 45 per cent. of diphtheria cases died, whereas this fatality rate has now dropped to about 9 per cent. That the fatality is not further reduced is due to the fact that not every case of diphtheria receives the antitoxin treatment, or that it is not employed soon enough, or that the dose has been insufficient.

The comparative mortality before and after the introduction of antitoxin is illustrated further in the following diagram.

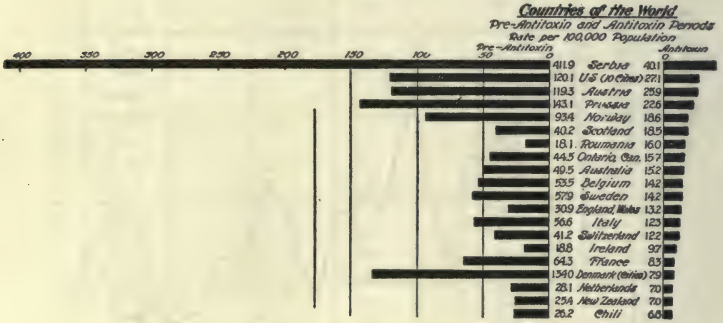

Fig 5.

Case Fatality.

Case fatality is the best measure of the efficiency of treatment. As the treatment of diphtheria is diphtheria antitoxin, it is interesting to compare case fatality rates before and after the introduction of the antitoxin treatment.

The case fatality in St. Thomas' Hospital, London, for the years

1888, 1889 and 1890 averaged 46 per cent. In St. George's Hospital, London, the case fatality in 1888 was 38 per cent.

In the French army during the years preceding the introduction of antitoxin treatment, 1888-1894, the case fatality from diphtheria was 11 per cent. In the years before the Great War, 1897-1914, the case fatality was only 3 per cent. This shows what antitoxin has done for young adults. For children the results are even more striking. At the Hospital for Sick Children in Paris in the four years preceding the introduction of antitoxin, nearly 4,000 children had diphtheria. Over 2,000 of them died—a case fatality of 51 per cent. In the same hospital in 1904 the case fatality was 7 per cent.

The hospitals of the Metropolitan Asylums Board receive about three-quarters of all the diphtheria patients in London. During the four-year period, 1890 to 1893, the average mortality rate amongst diphtheria patients in these hospitals was 30.4 per cent. Antitoxin treatment was introduced in 1894. The fatality rates for diphtheria in 1894 and the subsequent sixteen years were:—

TABLE VI.

Year	Mortality per 100 cases	Year	Mortality per 100 cases	Year	Mortality per 100 cases	Year	Mortality per 100 cases
1894	29.6	1899	15.4	1903	10.2	1907	10.4
1895	28.1	1900	12.9	1904	10.9	1908	10.9
1896	25.9	1901	12.6	1905	9.0	1909	9.7
1897	20.4	1902	11.8	1906	10.4	1910	8.3
1898	17.5						

Laryngeal diphtheria is an especially severe form of the disease. It is, therefore, a good test of the efficiency of treatment. The following diagram (Fig. 6) illustrates the decline in the case fatality from laryngeal diphtheria in the hospitals of the London Metropolitan Asylums Board. It will be noticed that the decline in case fatality commenced before the introduction of antitoxin. This applies generally as may be seen by reference to Figs. 2, 3 and 4 and their corresponding tables.

Antitoxin gives the best results when administered in large

CASE FATALITY FROM LARYNGEAL DIPHTHERIA
Hospitals of the Metropolitan Asylums Board, London, 1894-1910

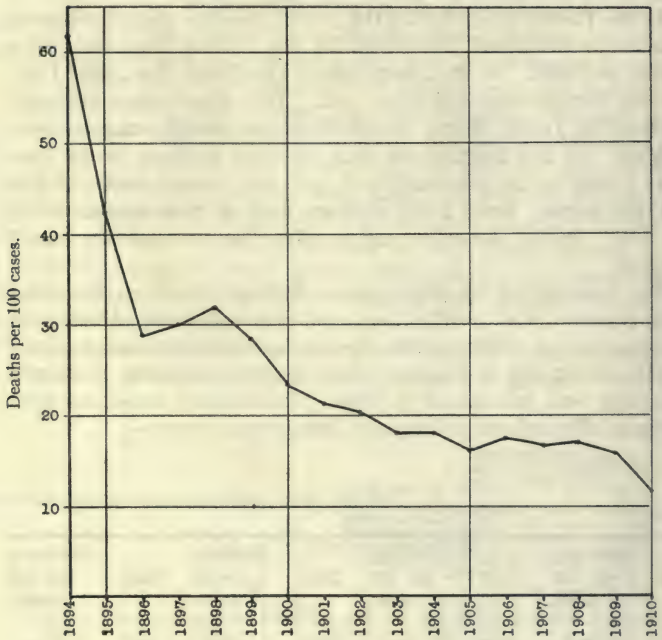

Fig 6.

doses early in the course of the disease. Every hour lost in the administration of antitoxin increases the chances of death as is shown in the following chart:—

CASE FATALITY ACCORDING TO DURATION OF DISEASE WHEN ANTITOXIN WAS GIVEN, PHILADELPHIA, PA., 1910-1914.

Antitoxin given	Deaths per 100 cases.
First day	1.1
Second day	5.6
Third day	6.8
Fourth day	7.7
Fifth day	9.2
Sixth day	9.3
Seventh day and later	11.4

Fig 7.

Case fatality rates for Toronto, Canada, from 1887 to 1922 are shown in Table V. and illustrated in the following diagram (Fig. 8). These case fatality rates have fallen more in the last decade than in the years immediately following the introduction of antitoxin.

In the report of the Medical Officer of Health of Toronto, 1904, statistics are presented to show that the mortality 1895-1904 among cases treated with antitoxin was greater than that among cases treated without antitoxin.

CASE FATALITY FROM DIPHTHERIA IN TORONTO, 1887-1922

Fig. 8.

This was not the fault of the antitoxin but lack of knowledge of its proper use. Antitoxin was usually given only to severe cases, late in the disease and in small doses. This point is illustrated by the experience of the Toronto Isolation Hospital.

From 1895 to 1904, antitoxin was used in very small doses and given only to some of the patients. The case mortality averaged 13 per cent.

From 1907 to 1911, antitoxin was used in all cases but the doses were not large. The case mortality averaged 11.6 per cent.

In 1912 Dr. Whyte took charge of the Isolation Hospital. He decided that the diphtheria mortality rate in the hospital was higher than those of some other cities, because the amount of antitoxin administered was smaller. Immediately he increased the dosage to almost twice the amount previously given, with the result that the fatality rate in hospital was reduced from 10.2 per cent. in 1911 to 6.8 per cent. in 1912. That this fall in fatality was not due to a decrease in the virility of the disease, is indicated by the fact that the fatality rate among cases not treated in the hospital was greatly increased in 1912 over 1911. This is shown in Table VII. This table shows that the patient in the hospital has had a better chance of recovery from diphtheria than the patient at home, in fact, a much better chance, for the hospital had a comparatively good rate in spite of receiving many of the more severe cases. During the past three years the rates for the two classes of patients have been the same.

TABLE VII.

HOSPITALIZATION IN RELATION TO CASE MORTALITY FROM DIPHTHERIA, TORONTO, 1907-1922.

Year	Deaths per 100 Cases			Percentage of Cases Hospitalized
	All Cases	Hospital Cases	Cases not Hospitalized	
1907	11.3	10.3	13.5	70.7
1908	13.1	11.9	15.3	65.5
1909	16.0	13.1	20.9	63.6
1910	13.4	12.2	14.9	51.8
1911	10.0	10.2	9.9	45.4
1912	12.0	6.8	16.3	49.6
1913	9.3	4.1	13.9	60.7
1914	9.8	7.7	11.3	70.1
1915	8.7	6.5	13.5	72.1
1916	8.8	7.0	13.2	70.8
1917	5.7	4.2	10.9	77.8
1918	7.7	6.4	12.9	80.4
1919	7.8	7.2	8.8	62.2
1920	9.9	9.8	10.0	50.5
1921	5.3	5.4	5.3	52.6
1922	5.6	5.6	5.6	66.0

Large doses of antitoxin were the reason for Whyte's achievement of reducing hospital mortality during a year when the extra-hospital mortality increased. Large doses of antitoxin have re-

duced the case fatality of the Blegdamshopital, Copenhagen, to less than 1 per cent. for faucial cases only.

This hospital receives most of the diphtheria cases among the 600,000 inhabitants of Copenhagen. During this period, serum treatment was always applied on a large scale, the serum being usually injected intramuscularly. Since 1916, the doses administered have been constantly increased until severe cases in 1921 were given 200,000 units. Experience showed that the larger the dose of antitoxin, the better the results. The details are shown in the following table:—

TABLE VIII.

CASE FATALITY FROM DIPHTHERIA —(FAUCIAL CASES ONLY)— BLEGDAMSHOPITAL, COPENHAGEN, 1916-1921.

Year	Cases	Deaths	Deaths per 100 cases
1916	657	10	1.5
1917	869	23	2.6
1918	968	14	1.4
1919	1,497	23	1.5
1920	1,977	17	0.86
1921	1,821	15	0.82

The foregoing indicates a tremendous improvement in the treatment of diphtheria following the introduction of antitoxin. Of this improvement there is no doubt but the rate of reduction has not been maintained during recent years. A good illustration of this slow progress in diphtheria control during recent years is given by a study of the fatality rates from diphtheria in Chicago from 1912 to 1919, which show that, while there is a slight fluctuation from year to year, there has been no appreciable decrease in the case fatality, the fatality rate of 11.31 per cent. for the four years, 1916 to 1919, being almost the same as for the preceding four years, when it was 11.63 per cent. From a study of 147 fatal cases observed in the Durand Hospital, Chicago, during the period 1913-1920, Weaver has come to the conclusion that the high death rate is partly due to neglect by the parents and partly to inefficient professional care which includes (a) failure to cultivate sore throats, (b) failure to give antitoxin at once without waiting for the result of the culture, or in the presence of a single negative culture, (c) failure to follow patients with a sore throat after

(*To be continued*).

Is the Nationalization of the Medical Profession Desirable?

By J. Heurner Mullin, M.D., Hamilton.*

In accepting the invitation to read a paper before this learned, ancient and august body, I little appreciated the difficulties confronting me. Much there is to be said and much should be said regarding the complete question of Medical Service. The task before me is not an attempt at the present time to cover the whole field completely but to present sufficient to interest you and make it possible for you to survey conditions for yourself. I hope that each will arrive at an intelligent conclusion from his own point of view. I should frankly admit that it is difficult for me to see from your point of view, and equally difficult for you, who are not trained in medical thought, to properly see mine.

On one occasion I used this simple illustration. If one were to go along up Wentworth Street to the foot of the incline and look up the mountain face and gaze on the new road, that magnificent park boulevard which is to be, winding its way from Ferguson Avenue towards Sherman Avenue; from the foot of the hill one would say that the road as it approaches the incline appears to be nearly at the top. Now proceed by means of the incline car to the brow, then to the edge of the lookout, again gaze down on the same roadway and you will tell me that it is more than one half way down. I think you will now understand what I mean.

Added to this difficulty I realize that it is not at all unlikely that some of the things which I say will be interpreted literally as personalities. If these are too flagrantly evident, I admit they are used intentionally and are necessary to strengthen my argument. The greater part of my story has been obtained through conversation with others, with illustrative references from other places in other lands.

The question before us has been entered in the programme, "Is The Nationalization of the Medical Profession Desirable?" If you wish my answer I can give it now. A very decided NO. It has

This paper was read before the Hamilton Scientific Association on January 5th, 1923.

always been so. I would much prefer to have the answer from the audience, perhaps now, but better later after you have had some opportunity to see things as you find them and get other information bearing on this subject.

It is certainly in the interest of this audience and in the interest of the public at large that each of you should become more thoroughly informed on the general question of Medical Service to the well and sick, and the facilities, which the State and individuals offer, and the method by which each meets the situation as it arises.

The Medical Profession in the past has been too reticent in discussing medical affairs with what we call the lay-public. Some of our members are too eager to criticize those, who, as they would say, use the opportunity for personal advertisement or advantage. In recent days others have dared to undertake this task, and with less timerity I can to-day refer to conditions and in the words of our national motto say to him who objects, "Evil be to him who evil thinks."

Before I go on with the story let us see what some others have to say about this subject.

> Benjamin Moore, in "The Dawn of the Health Age," attempts to show that hundreds of lives and millions of money can be saved every year if disease is attacked on scientific principles, instead of being dallied with as at present. He would prove that such a course is best both for the millionaire and the pauper, because there is one set of disease agents in the whole world, which attack rich and poor alike, and are transmitted from one to the other. There is not one word of party politics in the book from cover to cover, and readers are requested to attach no labels to it, but to judge it honestly on its own merits.
>
> "In the interests of our own common humanity, and to aid in the evolution of a fitter and healthier race, it is addressed equally to Conservative and Liberal, to humanitarian and economist, to capitalist and labourist, to individualist and socialist.
>
> All the great political parties in our State are committed by public utterances of their leaders, and by the tide of public opinion, to social reform, and the hygienic aspect of social reform is the most dominant of all, commanding the whole situation.
>
> Poverty and destitution simply cannot exist amongst a fit, virile healthy nation. Banish acute and chronic infectious diseases, teach temperate and normal habits of eating, drinking, and living, making the reverse a crime, and poverty and suffering in corresponding measure must decrease. The passion for drugging and doctoring the individual with specific cures and quack nostrums is one of the prepotent curses of our time; while the health and well-being of the species, and all things making for fitness of the race, are neglected.
>
> We allow diseases to invade and enfeeble us, then ruin our systems with drugs in attempting to exorcise the demon of disease, and when we fail we turn to the claptrap of faith-healing

or homeopathy, imbued with all the spirit of the superstition and idolatry of the Middle Ages. Take up any daily paper or monthly magazine and look at the columns and pages of costly advertisements devoted to quack medicines and remedeis of all kinds, reflect on the thousands of pounds spent by poor human gulls in supporting these frauds and the authors of them, and then ask yourself, is it not nearly time we had some rational system of dealing with disease and protecting people from their own ignorance?"

And he would build up a system for the construction of a National Health Service, manned by a staff paid a salary for whole time service. Each, he claimed, should be assigned a district in which to work. At certain hours the doctor should make his visiting rounds, much as he does at present, but under more ideal conditions than he can now enjoy. He would have no rivals worrying him, no bills to bother about, no suspicion lest his patients should think he was a seeker after fees. His practice would be compact in the district allotted to him, and while there would be sufficient supervision to see there was no shirking, he would be free from a hundred embarrassments in his work from which he now suffers.

He would add to this a complete service for preventive medicine and improvement in environment so that the wretched creature of present environment would improve with it.

Norman Barnesby, in "Medical Chaos and Crime, exposes the abuses that exist in the Medical Profession, abuses that not only degrade the practice of medicine and contribute not a little to the physical and moral deterioration of the whole people. In defense of his dramatic exposition he states than many in the profession have also denounced these abuses; many in public by written or spoken word, and many more by their utterances in private. He quotes from George W. Wagoner:

"If those who have been rushed into untimely graves by incompetent, pretending physicians could be marshalled into an army and marched in ghastly review before the astonished eyes of our indifferent legislators, what a ghost-like multitude of outraged victims there would be: one which would appal by its magnitude and horror, and excite the law-makers to a frenzy of action in the elimination of the incompetents from the ranks of those who assume to care for our health and lives."

From Sir William Osler, in "Aequanimitis," in speaking to students, "Make of a high and sacred calling a sordid business, regard your fellow-creatures as so many tools of trade, and if your heart's desire is for riches, they may be yours; but you will have bartered away the birthright of a noble heritage, traduced the physician's well-deserved title of the "Friend of Man," and falsified the best traditions of an ancient and honourable Guild."

In brief he attacks the system and social condition for which we are all partly responsible: doctors and laity, scientists and charlatans, law-makers and law-breakers. Particularly does he wish to emphsize and stigmatize the spirit of false ethics and infallibility that the medical profession alone has succeeded in preserving intact, a memorial of the myths and inhuman practices of our Medieval prototypes.

"What one man could estimate or depict the awful harvest of suffering and blood that we as a nation are reaping from our criminal apathy in allowing an organization of men as fallible as those of any other profession to acquire an irresponsible power of life and death over millions of helpless human beings?"

I would refer you to that greatest cynic and iconoclast of our time, Bernard Shaw. In his preface to "the Doctor's Dilemma," you will find the following:—

> "It is not the fault of our doctors that the medical service of the community, as at present provided for, is a murderous absurdity. That any sane nation, having observed that you could provide for the supply of bread by giving bakers a pecuniary interest in baking for you, should go on to give a surgeon a pecuniary interest in cutting off your leg, is enough to make one despair of political humanity.
>
> The surgeon need not take off the rich man's (or woman's) leg or arm; he can remove the appendix or the uvula and leave the patient none the worse after a fortnight or so in bed, whilst the nurse, the general practitioner, the apothecary, and the surgean will be the better.
>
> Doctors are just like other Englishmen; most of them have no honour and no conscience; what they commonly mistake for these is sentimentality and an intense dread of doing anything that everybody else does not do, or omitting to do anything that everybody else does.
>
> There is a fashion in operations as there is in sleeves and skirts; the triumph of some surgeon who has at last found out how to make a once desperate operation fairly safe is usually followed by a rage for that operation not only among the doctors, but actually among their patients. There are men and women whom the operating table seems to fascinate; half-alive people who through vanity, or hypochondria, or the craving to be the constant objects of anxious attention or what not, lose such feeble sense as they ever had of the value of their own organs and limbs. They seem to care as little for mutilation as lobsters or lizards, which at least have the excuse that they grow new claws and new tails if they lost the old ones.
>
> To make matters worse, doctors are hideously poor. Better be a railway porter than an ordinary English practitioner.
>
> The doctor whose success blinds public opinion to medical poverty is almost completely demoralized. His promotion means that his practice becomes more and more confined to the idle rich. And every hypochondriacal lady or gentleman who can be persuaded that he or she is a lifelong invalid means anything from fifty to five hundred pounds a year for the doctor."

As a cure for these and others he offers fourteen ready-made prescriptions, a few of which are:—

> Make up your mind how many doctors the community needs to keep it well.
>
> Do not register more or less than this number; and let the registration constitute the doctor a civil servant with a dignified living wage paid out of the public funds.
>
> Municipalize Harley Street.
>
> Make it compulsory for a doctor using a brass plate to have inscribed on it, in addition to the letters indicating his qualifications, the words, "Remember that I, too, am mortal."
>
> Do not try to live forever. You will not succeed.
>
> Use your health, even to the point of wearing it out. That is what it is for. Spend all you have before you die; and do not outlive yourself.

I will not proceed with these illustrations or you will almost believe that I am a convert to such arguments and that my continuance in the practice of medicine is merely an excuse for an attempt to earn a living for myself and family.

Numerous condemnatory quotations could be presented from those who are not entirely inspired by the spirit of altruism. The writings of some would show clearly that their products are the efforts of those of distorted mental equilibrium, prevertion of the sex complex, or religious fanaticism.

Cannot we all agree with the popular author of our day:

> "But one-third of the population of the world is yet civilized. Centuries hence a unified civilization may complete the circle, but human nature and progress must act and react a thousand times before the earthly millenium, and it cannot be hastened by dreamers and fanatics."

And further I would rather take the risk of being accused of lacking in modesty by quoting from Stevenson:

> "The physician is the flower (such as it is) of our civilization, and when that stage of man is done with and only remembered to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period and most notably exhibited the virtues of the race."

In the present complex state of our civilization is there not too great a tendency to conceal our mutual interdependence? Surely it is now just as imperative as it was in the primitive state, to obliterate individual selfishness, and demand of the present sane and modern elements of society, the recognition of their duties towards other members of the community. Should not the members of each group band together for efficiency of that service, which their group must render not only to their own, but in the interest of the public at large?

I am convinced that any independent and fair-minded critic will admit that our profession is more thoroughly organized for service and less for profit than any other group in society.

I do not believe that I am playing traitor to the other followers of the noble art, if I frankly admit that medical practice of to-day has developed many ills which we ourselves should remedy, and that these ills in some manner are responsible for the tendency of the public to seek assistance from all manner of quacks and irregulars who appear in the disguise of religion, mysticism or otherwise.

During the last two or three generations our plan for medical service has not kept pace with changes in our social life. Some revision is necessary in the interest of the whole public to-day.

Before actually beginning the study of medical service one should admit that the discussion of this service is intimately bound up with the general discussion of the social conditions of our time, as with them, a proper solution must be arrived at without selfish class opposition on the one hand or failure of co-operation through ignorance on the other.

Welfare work, charity or certain reform movements, in so far as they keep alive improper conditions, are negative forces. True philanthrophy should be based on scientific forethought taking the place of soft-headed and soft-hearted almsgiving. Instead of passing over surplus riches to the poor in soul destroying doles, should we not commence to realize that we must direct some of our surplus brains to the understanding of these problems.

In the early days of the war we were promised that the struggle would certainly level many of our previous class distinctions, and would make life worth while for a greater portion of our people. Poverty, crime, overcrowding under-nourishment, overwork, lack of education, irregularity of employment, or whatever prevents men, women and children from getting a decent living, all have their effects on the problems of public health.

Years of experience in daily service have given us a wide knowledge of social conditions and a sympathetic appreciation of the weakness of human nature: of the social as well as medical afflications which come upon various members of the community. If we study the various conditions as they are presented, our profession can be made of service to the community in the understanding of our problems in the new social order, more than any other one profession or class.

As we have been told, some would accept "State Medicine" as the great panacea for all our social ills. But can they define? Do they know what it means? Too many of those, who would so vote to-day, have made but a superficial examination of the principles involved or the plans recommended.

In regard to the adoption of government insurance of various kinds, the situation as it existed immediately prior to the Great War, seems best summed up by saying that accident compensation or accident insurance had been established practically throughout Europe and in many British Colonies. Compulsory sickness insurance had been introduced in about one half of the large countries of Europe, namely, Germany, Austria-Hungary, Norway, Great Britain, Serbia and Russia, and voluntary subsidized sickness in-

surance in France, Denmark, Sweden and Switzerland. Compulsory old age pensions in Denmark, Iceland, Great Britain, France, Australia and New Zealand, and voluntary subsidized State systems of old age insurance in Italy, Belgium, Serbia, and Spain. Unemployed insurance by means of subsidies to workmen's voluntary organizations was rapidly spreading in large European countries, and existed by national law in Norway and Denmark. The first compulsory unemployment system had been established in Great Britain; the first beginning of a national system of a widows' and orphans' pensions had been made in Germany.

It is probably well known to many that early in Lloyd George's parliamentary career, a National Health Insurance Bill was put into effect in England. There the Medical Profession were completely taken unawares and knew very little about the bill or its possible effect. Organized Medicine advanced tremendous opposition and it was only after a stubborn fight that they were able to get a reasonable per capita allowance for work done and the restriction to those earning low fixed weekly wage.

To-day the Act merely covers the industrial worker, and is not by any means Universal Nationalization. There can be no doubt that the Act gave to a large number of these workers medical service, of a kind, which they were previously unable to obtain under the prevalent system. About 14,000 medical men are working under the Act. Few, if any, would ask for its repeal. Most of them have far better incomes than they had previously, but the service is little better than it was under the Old Lodge or Contract plan. The same string of patients in offices getting the mere superficial inspection, rarely anything simulating a real examination, the same stock formula with which symptoms were treated according to the patient's description, in the same rush to get the job finished. Under this system little or no provision was made for scientific examination of the sick according to our better hospital ideals in this country and every inducement was made to encourage men to compel their patients to come to the office rather than give them the necessary conscientious attention in their homes. It can never be very much better according to this wholesale method of treating the sick. Radical changes will have to be made if the individual is to get the same attention as he would otherwise expect.

The Insurance movement in the United States has culminated in the presentation of the Standard Bill which was drawn up by the American Association for Labor Legislation.

Under this Bill the bulk of the work would be carried on by panel physicians. Every legally qualified man would be put on a panel, or list of physicians, willing to do health insurance work in his district. In some communities, it would be necessary to appoint a corps of consultants to furnish second opinions. These would especially be useful for small towns which lack dispensary service and hospital accommodation.

Under this Bill the medical organization appears as an integral part of a well-balanced scheme by which many quarrels and frictions produced in the Old World would be avoided. Disputes are safeguarded by arbitration committees and the medical profession is given the standing, and awarded certain privileges for which the English physician had to fight, namely, adequate representation on committees before which its interests will come up for discussion.

Though more satisfactory from many points of view than anything presented in other countries, the bill is most unsatisfactory from our present point of view. The problem of remuneration alone is one which must stagger the honest legislator, and bring the ethical basis into question, and with this the wisdom of accepting the whole measure. In addition to this, the malingerer problem presents difficulties which must be self-evident, especially to those who have seen active military service. In private life the malingerer would have ample opportunity to take advantage of any free-doctoring scheme accentuated by a compensation for a period of illness.

In place of such a scheme it has already been suggested that a programme of health insurance without medical service should be nationally introduced which would supply funds to individuals necessary to see them through any contingency, the result of illness. Investigation will show that various types of insurance are now widely in force but these only effect private individuals and various groups in industry and are mostly for the benefit of those better able to bear the burden of illness. Closer investigation of this proposal is deserving of more attention.

It must be now evident to all present that State Medicine as many visualize it to-day, is a threat, not a solution of this difficult problem of supplying adequate medical service to the community.

Under present conditions it would be interesting to have some statistical information as to how the average doctor ever acquires a practice. Does he have to join some church? Does he have to sing in the choir, teach in the Sunday School or take an active part

in the Men's Club? Does he have to join the Lodge and become famous as a ritualist? Does he need to be conspicuous by playing on the bowling green or at golf?

On the other hand what of the layman? Is he able to select his medical attendant intelligently? Does the stranger in town, who takes sick at the Hotel make the investigations similar to those he would undertake should he be involved in a big business deal and require legal advice? In the hotel does he not merely ask the clerk at the desk? Outside is not his selection influenced by qualities of an emotional or sentimental nature? Is he not likely to be on the lookout for the nice doctor with good manners, dress or other attributes suggesting popularity and success? The doctor's ability to inspire confidence is desirable in all cases but this alone is too often the main stock in trade of the charlatan.

Members of the medical profession would certainly find their ears burning or be subject to other more disagreeable sensations should it be possible for them to listen in, unseen and unknown, at some afternoon tea or in more select smaller groups, when their ability and other qualifications are being discussed by our uninformed and idle gossipers of to-day. More or less garbled repetitions of various discussions have come to the attention of all of us and strange does it appear how little real capacity has any influence in moulding our reputations or reflecting on our passing popularity.

It is generally accepted to-day that in Hospital practice the patient in the Public Ward gets the best medical service available in any community. Consultants in every branch are freely available and those who have expert knowledge are always ready and willing to give opinion without fee or other expectation of reward. Because he can pay for it, the rich man may be able to get such composite opinion but there is no guarantee that he always does. We must admit that the great middle class, who in case of serious complexity, have to consider the limit of their capacity to pay expert fees, perhaps never get the best opinion available.

Taking the general average, in any community, and all types of illness the picture of course is not quite so bad as an extremist might present along these lines. Nevertheless it is apparent that it soon may be necessary to plan some revision of the system of practice, which may include public diagnostic clinics and other arrangements for attendance in the home for those unable to pay current fees.

Unless the medical profession as a whole undertakes some re-adaptation to present day needs they cannot object if the State or some other agency endeavours to buy this co-operation.

A sad misunderstanding, too prevalent to-day, would place each individual in a democracy equal in respect to natural ability and adaptability. As Rosseau says, this equality is never found in nature. The American nation in framing its Constitution admitted "equality of opportunity." The literal and blind adherence to these falacies would bring about a form of socialism in which the individual has no opportunity whatever and in which his supposed equality is absolutely submerged. Is it not merely necessary to admit that in a democracy such as ours—the British—the individual has the right to a full and complete liberty limited only by the liberty of every other man?

I am convinced that any who are willing to give this subject of Medical Service serious study will agree that no satisfactory system can be devised which will entirely eliminate the individual relationship between the sick patient and his own doctor. Some would call him the doctor of the old school, the Doctor McClure type from the "Bonnie Briar Bush," the man who knew the various members of the family in their most intimate personal affairs from the cradle to the grave.

We have passed through a stage in which an attempt was made to ridicule the advantage of knowing the "constitution," but on a sound and scientific basis we now know, that there is a tremendous advantage to the patient to be able to refer to one man who has watched the progress of his life in health and disease, who has real knowledge of his environment, physical, social and mental, and who has in addition personal appreciation of recent or remote hereditary influences.

In recent years we have seen patients float from one doctor to another. Each of us has listened to their distorted and incomplete descriptions of their previous medical history. You may invite several experts to undertake the tuning and re-tuning of the piano in your parlour. They may call day after day, one after the other. We can agree that little harm will result and that if the last expert knew his job, the finished product should be satisfactory to those who would display technical ability or provide melodious entertainment. On the other hand what sane man would advise his friend to engage several experts to work day after day, all at the same time, in their endeavours to encourage the liver to resume its normal activity. In our bodies many of our organs are mutually

interdependent in their functions. A more evident absurdity would be to have a specialist for each of these.

In the United States an attempt to correct the evil which arose from the presence of a multitude of graduates from incompetent schools there developed a tendency for men to become specialists. Too many of these consisted of young graduates whose independent income was sufficient to permit them to spend a short period in the further pursuit of knowledge and experience. Thus they began practice with a high sounding title and the outward appearance of superiority and authority.

We know that the six-week specialist and the bumptuous novice were a serious factor in unsettling the public mind and preventing their real appreciation of medical progress. Their various tricks and trades, unnecessary fireworks, parlour clinics to the family circle of the unfortunate patient, sneers and jibes regarding the methods of their neighbours in the profession were sufficiently obvious to the well informed. But on a commercial basis little prevented the further extension of their field of opportunity and little did many of them care how much they exploited trustful and unsuspecting patients.

Even the graduates from the best schools, who remained in general work, too frequently neglected to keep up to date or failed to call assistance when the occasion required it. Possibly the type to competitor referred to above made it impossible for them to trust these as consultants. The public being unable to judge for themselves regarding the real ability of the attendant, whom they might select, merely drifted with the popular current to any who called themselves specialists. It is unnecessary to enlarge on the confusions and dangers in this method of action but it must be plain that in this attempt to correct an evil, what might have been a good thing if kept within proper bounds, has become an abuse which itself must be corrected.

The American public are certainly disgusted with the multiplication of such as these: the advertising Heart Specialists, Lung Specialists, Stomach Specialists, Kidney Specialists, Blood and Nerve Specialists, and even some of the child doctors. In medical circles it is recognized that something should be done to guarantee that the few which are necessary are fully qualified. Many of their best men in medicine now urge the return of the good general man for the ordinary routine care of the sick.

In Britain the expert is not permitted to go to the public for his reputation. Their code insists that the consultant shall take

cases which are referred, thus the consultant looks to the profession for his reputation. This system gives the consultant plenty of time in his daily routine for study and research and to render real service when the occasion demands.

It is by no means suggested that it is possible for any man to keep abreast of all developments in every field of medicine. The doctor who undertakes to conduct his business along these lines must surely have a hard time to satisfy his conscience in moments of quiet, if any there should be. The teacher or consultant who by long experience and training is fully qualified will always be necessary for the development of knowledge in certain fields of work and the application of this knowledge when occasion demands. The consultant should understand his duty to assist in the Post Graduate training of the general man. Many of the specialist's procedures of yesterday are to-day routine in all general work.

The well-trained general practitioner should be depended upon to carry on the treatment advised by consultant in case of serious malady and for honest and safe advice during the many minor ailments, which if propery cared for, play such an important role in preventive medicine as applied to the individual.

It would be well for those who would criticize our code of ethics to read that laid down by our National Association. The unbiased critic would soon discover that the code and its underlinery principles, developed in British Medicine through several generations, had as its essential background, the protection of the patient.

The occasional misapplication of these principles furnishes a poor argument for their complete obliteration. The rabid critic is much in the same position as the ignorant fan, who never reads the rules. At long range he does not understand the point under discussion and his only slogan is "kill the umpire," whenever the decision appears to affect his interest in the game.

It should certainly be the duty of intelligent members of the community to support our profession in the maintenance of the highest ideals and the elevation of our standards. We should never be insiduously accused of narrow and selfish class interest if we merely endeavour to present arguments in favor of such ideals.

In view of the suspicion and bias which may be attached to whatever I might say about the restrictions which should be imposed on those who would treat the sick for gain, let us take an independent view from one who was engaged by the Government in this Province to investigate the whole question of Medical Practice,—namely, Hon. Mr. Justice Hodgins:—

"I do not think that the situation can be properly considered unless some definite ideas are entertained as to what is the true function of the state in relation to the practice of medicine, and what medical education is intended to produce.

It ought to be clear that individuals making up the public are not themselves competent to form a proper conception of the value or the reverse of the services of those holding themselves out as physicians. There are few positions in life in which a man is so completely and often so suddenly placed in the hands of someone else as is the sick man in the presence of the physician. He cannot bargain on equal terms, and his family are equally helpless, both because of their ignorance of medical science and because, under usual circumstances, they are anxious and worried. Hence it has always been one of the highest duties of the state to see that those who are called in to ascertain the cause and prescribe for its remedy, and not only so, but the prevention of disease in the community is such a pressing and vital need that the state is not content with providing proper training for the physician, but it compels the citizens of the state to submit not only to rules and regulations, but also to drastic measures, cures and operations for the benefit of the community prescribed by those who have adequate training and experience in such matters. And this presupposes that the state has satisfied itself that proper standards of learning have been set up and maintained for those who are thus authorized to heal and to direct.

It may, I think, be taken for granted that the duty of the state in this regard is thoroughly recognized and welcomed, and that those who want a change in the present situation do not desire to ignore its necessity and importance.

The question, then, revolves itself into this: Can a change, which permits the training and licensing of physicians on a plan or theory different from that adhered to at present, be made with safety to the individual and without relaxing the care of the state in the performance of its admitted duty?"

Many of the public and some of the Medical Profession often presume that the introduction of a new cult indicates a supposed deficiency in the methods of regular medicine of the day. Too often the cult indicates the neglect to use procedures which, in less dramatic form, are available for use by our Profession. Medicine, like other sciences, will be always subject to change with the introduction of new knowledge, but only so rapidly as this new knowledge may be proven to be reasonably accurate and valuable. When the cult, taking advantage of this commendable delay, and in handling a limited field of practice may apparently show results, the public should look for more information before it accepts the cult as a complete new system applicable to all manner of disease. Medicine in the past has benefitted by the introduction of new information by its members, either those in practice, or pure scientists, and will surely in the future absorb procedures, even

(*To be continued*)

Public Health Administration

By Dr. John W. S. McCullough, D.P.H., *Chief Officer of Health, Ontario.*

It is a pleasure to have the opportunity of addressing the Association of Medical Officers of Health for Nova Scotia.

The administration of public health matters of the Province in the final analysis depends upon your efforts. The Health Department of the Province may initiate and the Legislature enact the laws but upon the local men in the urban and rural areas depend their successful operation. In the conduct of public health affairs you have the guidance and direction of public opinion. The success and advancement of preventive medicine are in your hands.

Successful public health administration depends upon two main factors:

(1) *The wise expenditure of sufficient money.*

(2) *The education, administrative ability and personality of the health officer and his staff.*

1. Public Health Expenditures.

In the budget set aside for health work be it great or small, provision should be made for pure public health alone, such for example, as the control of communicable diseases, including tuberculosis and venereal diseases, for sanitary inspection, for maternal and child hygiene and public health nursing, for medical inspection of schools. Such matters as garbage collection, street cleaning, while most desirable, and other things not of a public health nature should not be included as they unduly swell the expenses. It is not advisable that anything should be charged to the account of public health work which does not legitimately belong thereto. It is generally conceded by public health authorities that an expenditure of seventy-one cents per capita is necessary for adequate public health work. In Ontario expenditure of the kind ranges from ten cents per head in a large number of the rural areas to as high as 1.64 per capita. In the year 1921 eight cities in Ontario spent an average of 1.25 per capita and the remaining postion of the Province averaged twenty-three cents per capita. Unless a municipality is able and willing to spend a reasonable sum in its health work the efforts of a health officer, be he ever so competent, will not have the results desired.

Address to the Nova Scotia Health Officers' Association, July 3rd, 1923.

2. The second important requisite to a satisfactory public health department is the health officer himself. First of all this officer should have at least a fair training in scientific public health work. That he is a physician is requisite but not a sufficient qualification. No amount of public health knowledge, however, will will take the place of the tact and common-sense, patience and perhaps sense of humour, essential to success. A great deal of money in my own Province is spent to little advantage, first, because the majority of the local medical officers of health are part-time men, and for this reason, and because too of lack of training expenditures are misapplied. This brings me to the subject of the part-time medical officer of health as compared with the full-time man. You will forgive me for continually referring to my own Province. I do so to illustrate the defects in our organization rather than to glorify our achievements. Outside the central office we have eight full-time District Officers of Health, well trained men, all physicians, and five trained Sanitary Inspectors. As already intimated we have eight cities with full-time medical officers of health. In the other municipalities (904 in all) the medical officer of health is a practising physician doing part-time work as medical officer of health. This system has serious defects. Our experience is that in every instance where we have a full-time medical officer of health there is a fair budget averaging 1.25 per head and excellent work is being done. I regret I cannot say the same of the large majority of the remaining municipalities. There are exceptions in that a number of the part-time men even where they are inadequately paid carry on their work with commendable enthusiasm and are able to accomplish more than under such circumstances might be expected.

Public health administration is a business. It is gradually being understood as the most important business of any community. The public are not yet seized of its importance, but day by day in every way this knowledge is slowly filtering into the brain of the average man and woman. Physicians and public health men are aware of the high importance of preventive medicine and it is through them and their associates that knowledge of the high value of prevention of disease can reach the public. No business of any kind could be expected to prosper without a competent directing head. Take for example the great banks of this country with their numerous branches. What would be thought of the plan of having the branches of a bank in city, town and village in the hands of a local man even of high business capacity who spent the greater

part of his time in his own business and gave to the bank an hour or a few hours a day? The thought of such a thing is so ridiculous that such a plan would be regarded as folly. Yet in the business of public health such, in the great majority of cases, is exactly the one pursued. Naturally the first consideration of the medical practitioner acting as a part-time medical officer of health is his real means of livelihood, his medical practice. Usually the fact that he holds the office of medical officer of health is detrimental to the interest of his practice, it often strains the best relations with his confreres, raises the animosities of those affected by his enforcement of Regulations, and sends them to other physicians. The ordinary medical man for these reasons is financially better off without the questionable distinction of such an office. As a result the municipality suffers, outbreaks of smallpox and other communicable disease spread to large proportions before any means are taken to check them with the consequent cost often out of proportion what such cost would have been were a competent full-time man on the job, real public health work such as the pre-natal and post-natal care of mothers, prevention of infant mortality, of tuberculosis, of venereal diseases, medical inspection of schools and other public health work receive no attention whatever. Besides these difficulties of the medical officer of health he receives little remuneration for his services. Outside the cities and larger towns of Ontario the pay ranges from $30.00 to $276.00 per year. Some officers in the larger towns and smaller cities are paid as much as from $500.00 to $1,000 or $1,200, a few $1,500 to $1,800, but in no instance is the remuneration given in the part-time service sufficient to compensate the medical officer of health for his services.

Notwithstanding all this a large sum is spent by the municipalities of the Province at large in public health work. The total sum reaches to about one and a half millions of dollars. Of this sum over a million dollars is expended in the eight cities with full-time medical officers of health. The balance about $300,000 is expended in the smaller towns, villages and rural areas. If it were well applied and administered by a real organization backed up by the present fairly well organized central department much good could be accomplished.

The Provincial Board of Health which has charge of the central administrative work maintains in the prosecution of its work the following Divisons, viz.: Public Health Administration, Sanitary Engineering, Public Health Education, Maternal and Child Welfare and Public Health Nursing, Industrial Hygiene and Laboratories.

Under the same executive is the work of collecting and compiling the records of Vital Statistics. The annual cost is about $600,000 and the staff comprises some thirty physicians, eighteen public health nurses, a full corps of bacteriologists and chemists carrying on work in eight public health laboratories, a corps of sanitary engineers, sanitary specialists, etc. in each division. We carry on seventeen venereal disease clinics, manufacture certain vaccines as well as phenersonamine (606) and purchase antitoxin and other preventive sera, all of which are supplied free to the public. Our public health nurses and our division of public health education carry the knowledge of health prevention to a wide circle. The prevention and not the treatment side is made a prominent feature. The function of a health department is, in my opinion, prevention, leaving cure to the physician in practice. The only exception to this which can be justified is in the case of certain communicable affections such as venereal disease and tuberculosis where special treatment is essential in preventing the spread of infection. No Government, in my opinion, is justified in interfering with the legitimate work of private agencies except in so far as is necessary to protect the lives of its citizens, and it is in this direction and to this only should state medicine interfere with general practice.

In the successful prosecution of the active work of public health the spread of education is an essential feature. This can best be accomplished by means of lectures, exhibits, films, the radio broadcast and particularly by short, bright and snappy articles in the newspapers, our universal source of information. But the best educator of all is the public health nurse, one with a liberal nursing education and with in addition special training in public health. The public health nurse reaches the home and the heart of the mother as no else, not even the physician can do. She is trusted and her advice in means of prevention is readily accepted. There should be a public health nurse under the general supervision of the local health department in every place of two thousand people. She should be a feature of adequate school inspection. But she is a nurse and not a doctor. There is a possibility, unless this feature of her service is clearly understood, that the nurse will be regarded with suspicion by the doctor. She should not rest under any imputation of this kind and she will not if her training has been of the proper character. The successful public health nurse must not undertake treatment except in first aid or emergency of any kind. Her business is in prevention only or in emergency nursing. The real public health nurse will bring legitimate practice to the phy-

sician. No organization of any kind other than the local authority with perhaps the supervision and assistance of the central health department should have any control of a public health nurse. Dual control is like the serving of God and Mamman, it cannot endure. The nurse serves a particularly valuable function in the pre-natal supervision of pregnant women in that she leads them to the source of proper treatment. She is of high value in the prevention of infant mortality, not by advice or treatment, but by her assistance in securing adequate medical advice—she is essential in school inspection forming an important factor of the quarto of teacher, nurse, doctor and dentist. Her services cannot be duplicated in respect to venereal diseases, tuberculosis and other medical and social subjects. Just as the nurse is the strong right arm of the physician and surgeon in practice so she is perhaps one of the most important workers engaged in preventive medicine.

How can better organization in public health work be secured? In a large territory of moderate population and limited financial resources how can better service be secured?

So far as Ontario is concerned and I doubt not that conditions in this respect are much the same over Canada, the remedy in my opinion lies in consolidation of larger areas than a municipality into a health area. In England the unit is a large city or portions, as in London, of a large city, or a county or a part of a county with its contained large towns, which units are designated "combined areas." These areas at present in the aggregate spend considerable money on public health. Our experience is that the fault lies in multiplicity of the part-time officer, with poor pay, want of training and the disabilities already referred to, under which he labours. If there are twenty medical officers of health in a county, each paid say $150.00 to $200.00 a year, there would be a sufficient salary for a well qualified officer for the whole area. He should have a sufficient number of public health nurses to cover the area, a sanitary inspector who knows his job and a stenographer. Such an organization should be subsidized by the Government. A budget of $10,000 would take care of a large area and be productive of a service of the highest value and form attractive posts for physicians who were inclined to enter the ranks of preventive medicine. This is the type of organization to which we look forward in Ontario.

The services and expenses of the sixty trained officers needed in Ontario would cost, including the budget of $10,000 for sixty combined rural and suburban areas $600,000, where now $300,000 is more or less wasted. The other $300,000 if advanced by the

Government would be one of the finest investments the Government could make—it would lessen the present waste of money, secure satisfactory public health administration and prove a blessing to the communities involved.

At the present moment it seems probable that we are on the eve of material advances in public health work in my native Province. The premier-elect has stated "with the advancement of medical science and sanitation it becomes apparent that more systematic methods must be adopted to protect and preserve the health of our citizens. The various phases of his important work (now scattered through many branches of the public service) must be co-ordinated under one experienced head. This will bring about uniformity of policy, greater efficiency and economy with all their attendant advantages."

"Advancement in public activities in one part of Canada assists in advancement in every other one. The adoption of a Ministry of Health in your closest neighbor New Brunswick, paved the way for a Ministry of Health, with all its attendant advantages in Canada, and for similar advances in certain of the western provinces. We may, I venture to predict, soon expect progress of the same nature all over Canada.

Social Background

Unemployment and Family Morale

Miss Nora Lea, Moss Park District Secretary, Neighbourhood Workers' Association.

Address given at the Social Case Workers' Conference of the Neighborhood Workers' Ass'n., April 18th, 1923.

UNEMPLOYMENT is something which we as family workers are all too familiar with, and like the poor we seem to have it with us always, to a certain extent. I do not propose to go into the fundamental causes of unemployment—its relation to economic conditions and business fluctuations. We all know that periods of depression come at more or less regular intervals and especially after great wars. We are concerned, however, with the practical side of the question—the problem as we find it in our midst to-day and its effect on the people with whom we are dealing.

I think that only those who have actually worked in the homes of our people and who have day by day been brought into close personal touch with unemployment and its consequent results can realize its tragedy, its horror and the wideness of its extent.

To many families where the bread-winner is engaged in temporary or irregular work it is like a cloud hanging always over them which they daily expect to fall upon them. Such an atmosphere is bound to be unsettling and is disastrous to persons whose nerves are on edge.

From a statistical point of view, and we all realize how important statistics are—it is interesting to note that among 1.083 cases handled by a family work agency in this city during a short period 485 cases were recorded as showing unemployment problems or about 45 per cent. of the total. This would only be a fraction of the total percentage for the city were the statistics for such an estimate available.

Then in regard to the types of workmen which are most likely to be thrown out. We find almost every trade represented. Day labourers, of course, figure largely—partly because they exist in such great numbers among the people with whom we are brought

into contact and partly because their work is only temporary at the best of times and they suffer with each fluctuation in the labour market. Motor mechanics, especially during the past winter when so many cars were laid away, have suffered heavily; and in the last three months I have had applications for assistance from men employed in practically every trade one could mention including an author and an accountant—if such occupation could be classed as "trades."

Unemployment as it affects family morale has many sides and is something that could be discussed for hours.

How often we have seen the self-respecting and independent family degenerate and become bottomless pits, so to speak, taking all they can get and demanding it simply because the man has lost his job and in spite of persistent efforts has not been able to secure another one. The downward path is easy and they slip from one stage to another until they reach a condition from which it is almost impossible to raise them.

When a man works and receives his pay envelope regularly, there is an intangible something which comes to him which tends to make him stiffen his backbone and put a good face before the world. Of course, there are always exceptions and we can cite the case *here* that has not gone down under discouragement and defeat and *there* that has failed even though in regular employment.

As in so many other instances it is often the woman who suffers most, and many a mother, unable to get her children into the day nursery has been forced to leave them to the casual care of a neighbour or roomer and go out to work in order to meet the demands of a justly indignant landlord whose rent has remained long unpaid. The whole family suffers—the baby, who should be having his mother's undivided attention during his first year—the small child, who through the lack of plenty of milk and good nourishing food becomes underweight and subject to disease—the school child, who goes out improperly clad and often with wet feet, being also subject to disease—the growing boy or girl who, impatient of the restricted home amusements and the general feeling of depression looks elsewhere for his recreation and often joins the ranks of the delinquents—the mother, whose strength and vitality is sapped by doing her own work and charring as well—the father, who by degrees shifts his responsibilities to other shoulders and joins the great army of the loafers.

Domestic disagreements thrive amid unemployment—tempers

and tongues are sharpened by worry and many a charge is laid in the Morality Office which would never have been thought of had the man been out all day at his work instead of sitting around at home, continually in his wife's way and reminding her of his failure to function as the bread-winner. Those of you who saw the clever little skit, "Social Work as it is not done," will remember Mrs. Pinkey's remark that it was not 'Orace's being out of work that she minded so much as the walkin' round him in the kitchen—and how how true that is.

As we have seen in the previous discussion these domestic bickerings, small though they seem at first, often lead to desertion and non-support—the man wilfully throwing up his responsibilities and betaking himself to more congenial and less irritating surroundings.

Without trespassing on this afternoon's programme might I just mention unemployment as a contributing cause towards immorality and venereal diseases.

To give concrete illustrations of how families are effected by this problem would be superfluous as you have probably all been thinking of type cases.

After three winters of unemployment are we not coming to look upon it too much as a necessary evil—something which is inevitable and must be endured and coped with as well as may be? Should we not realize that here is a great evil striking to the very roots of the family and touching all members of the unit—something that is affecting, not only the present generation, but those children who in twenty years' time should form the backbone of our nation. Surely if we look upon it in that light we must take some action to rectify this condition and so affect legislation that when the next economic depression shall occur we may be ready and equipped to meet the emergency.

Unemployment presents itself as a challenge to our thinking public—are we going to accept that challenge?

ONTARIO

The Provincial Board of Health of Ontario

COMMUNICABLE DISEASES REPORTED FOR THE PROVINCE FOR THE MONTH OF AUGUST, 1923.

COMPARATIVE TABLE.

Diseases.	Aug., 1923 Cases.	Deaths.	Aug., 1922. Cases.	Deaths.
Small-pox	9	0	31	0
Scarlet Fever	215	6	141	14
Diphtheria	194	12	197	10
Measles	256	3	250	2
Whooping Cough	197	13	163	4
Typhoid	114	14	63	17
Tuberculosis	183	135	133	109
Infantile Paralysis	.....	.....	92	11
Cerebro Spinal Meningitis	.....	8	7	6
Influenzal Pneumonia	.....	4	.....	7
Pneumonia	.....	83	.....	72
Syphilis	161	.....	247	.....
Gonorrhoea	212	.....	270	.....
Chancroid	5	.....	7	.....

The chief incident in communicable diseases reported for the Province for the month of August is the marked decrease in venereal diseases, as may be seen in the comparative table.

It will be observed there were no cases or deaths reported of infantile paralysis, while for the same period last year 92 cases with 11 deaths occurred in the Province.

The returns received of diphtheria, measles and whooping cough show but little vriation compared with the same period last year.

Reports received of scarlet fever, typhoid and tuberculosis show an increase over that of 1922.

American Public Health Association—Fifty-second Annual Meeting.

The American Public Health Association extends to the public health profession and others interested, a cordial invitation to attend its fifty-second annual meeting, in Boston, Massachusetts, October 8-11. Headquarters will be at the Copley-Plaza Hotel.

The annual meetings of this Association are always important events in the public health world, but the meeting this year is of more than usual interest since it ends the first twelve months of the new programme adopted as a result of the Association's reorganization in 1922. Two General Sessions and twenty-six meetings of the scientific sessions will be held this year. In addition, many trips of technical and general interest have been planned around historic old Boston as part of the entertainment and educational programme. On Monday evening, October 8, the formal opening session will be followed by a reception. On Wednesday evening, October 10, Sir Thomas Oliver, distinguished English industrial hygienist, and Dr. George E. Vincent, President of the Rockefeller Foundation, will address the Second General Session. The scientific programme, embracing all branches of public health, will be held according to sections as follows: Public Health Administration, Laboratory, Sanitary Engineering, Vital Statistics, Child Hygiene, Food and Drugs, Industrial Hygiene, Public Health Nursing, Health Education and Publicity.

Among the important subjects scheduled for discussion are papers on food inspection, growth of children, full-time health officers, mental hygiene in the school programme, nutrition work, the effect of so-called moonshine liquors, standards for schoolhouse construction and sanitation, epidemiology, better birth registration, organic heart disease, studies on the etiology of common colds, water supply and purification, mosquito control, etc.

An important report of the Committee on Municipal Health Department Practice will be presented in the Public Health Administration Section. At this time the announced plan for the awards to cities for distinctive community service will be discussed. The problems of health officers in small communities will be specially considered at a Round Table discussion scheduled for Wednesday a.m. The clinic on Printed Matter, which has proved valuable in past years, will be held again this year by the Section

on Health Education and Publicity. At this clinic, samples of public health publicity will be examined and criticized by experts. Of special interest also is the report of the Committee on Health Problems in Education of the Child Hygiene Section.

The September issue of the *American Journal of Public Health* carries the preliminary annual meeting programme arranged by sections, and the October Journal will contain additional information. Members of the Association, travelling by rail to Boston, may secure a reduction of one-fourth the regular round-trip rate.

News Notes

Two members of the Canadian National Committee for Mental Hygiene made a seven thousand mile trip throughout Western Canada, in May and June of this year. The chief purpose of the journey was to lay the foundation for an educational and financial campaign in 1924. Committees were organized in eight of the largest cities, and, from present indications, the national educational campaign of next year will meet with great success.

The members of the Committee viewed with interest recent mental hygiene developments. New buildings for the insane and feeble-minded were visited,—buildings and equipment that cost their respective governments over five million dollars. Among noteworthy developments were the training school for nurses at the Provincial Mental Hospital, Brandon; the organization of a thoroughly equipped occupational therapy division at the Provincial Mental Hospital, Battleford, Sask.; the formation of a Division for the Care of the Feebleminded, under the Alberta Government; the erection of a new occupational therapy building at the New Westminster Hospital for the Insane, New Westminster, B.C.

Opportunity was given to address Canadian Clubs, Boards of Trade and other representative bodies. Keen interest was shown in the field of Mental Hygiene, and after five years of work, the National Committee was congratulated upon its success.

Through the co-operation of the Provincial Board of Health the Canadian Social Hygiene Council have been able to hold meetings nightly in the Provincial Board of Health Tent during the Canadian National Exhibition. Mrs. Pankhurst spoke every night on Social Hygiene, while a well-known medical man has occupied the chair on each occasion. Chairmen included: Dr. Noble Black, Dr. Edna Guest, Dr. MacKenzie Smith, Dr. A. L. McKay, Dr. George S. Strathy, Dr. H. C. Cruikshank, Dr. Alexander McPhedran, Dr. Gordon Bates, Hon. Dr. Forbes Godfrey, Dr. W. E. King, Dr. J. G. Cunningham.

On May 24th Dr. C. K. Clarke, Medical Director of the Canadian National Committee for Mental Hygiene, delivered the Maudsley Lecture on Psychiatry in London, Eng. He devoted particular attention to the subject of Mental Hygiene as applied to the solution of many social problems. His audience was particul-

arly interested in his account of recent advances made in the Dominion of Canada. Dr. Clarke returned with many pleasant memories of his cordial reception, not only in the British Isles, but also on the Continent.

The fourth annual Canadian Conference on Child Welfare was held in Winnipeg on September 11th to 14th. The Canadian Association of Child Protection Officers met at the same time and place.

A letter has been received by the Canadian National Committee for Mental Hygiene from the Soviet Government, Russia, concerning the establishment of a Clinic in Moscow for the study of criminals. It is interesting to note that the advice of Canadians is being sought from such a distant quarter.

The Ottawa Social Hygiene Council has an excellent Social Hygiene exhibit at the annual Ottawa Exhibition.

The Canadian Tuberculosis Association have reprinted the addresses on Tuberculosis which were delivered at the annual meeting of the Canadian Public Health Association in Edmonton.

Mr. Clifford W. Beers, founder of the Mental Hygiene Movement, has recently spent six weeks in England, France and Belgium in the interest of an International Congress on Mental Hygiene to be held in America in 1924 or 1925. Mr. Beers was graciously received by the King of Belgium, Cardinal Mercer, President Poincare, Mr. Clemenceau and Britishers of distinction. According to Mr. Beers, the whole subject of Mental Hygiene is one of profound interest to Europeans, and National Committees are being organized in all civilized countries.

A Psychopathic Hospital for Toronto is now in process of erection in close proximity to Toronto University and the General Hospital. With the present rate of progress, the building will be ready for the reception of patients in probably six months.

The Executive Committee of the Canadian National Association of Trained Nurses wishes to announce that a National Office for the Association has been established at 609 Boyd Building,

Winnipeg, Man., with Miss Jean S. Wilson, Reg. N., Executive Secretary, in charge.

The nurses of the various associations affiliated in the National Association have long felt the need of a headquarters' office with a full-time secretary, and at the annual meeting held in Edmonton in June, 1922, a majority vote of the associations represented decided on the establishment of such an office.

It is the wish of the members of the National Association that this office should become a Bureau of Information for the various branches of the nursing profession in Canada. Nurses wishing to obtain positions should send a request to the executive secretary for an information form. Hospitals, institutions and organizations employing registered nurses are recommended to refer to the executive secretary when wishing to obtain the names of nurses available for their needs. No fee or commission is charged for any assistance received through the National Office.

The duties of the Treasurer and Archivist have been delegated to the Executive Secretary.

Dr. M. M. Seymour, Deputy Minister of Public Health for Saskatchewan, has been nominated by the Dominion Government to be the Canadian representative on the public health department of the League of Nations. He will attend the fall meeting of the League in Geneva. The public health conference of the league will open in Washington Sept. 15. Health conditions in America will be surveyed by the conference, which will then proceed to Europe to make a similar survey, completing the work with a final conference at Geneva.

Editorial

THE CAMPAIGN TO CLEAN UP THE NEWS STANDS.

Encouraging results have already followed the publication of the editorial "It is Time to Act" in the June number of the PUBLIC HEALTH JOURNAL. A number of the best known newspapers and magazines of Canada have reprinted the editorial with favourable comments, and the JOURNAL has received a number of letters from prominent Canadians in many walks of life. It is planned to publish these letters in early numbers of the JOURNAL and to keep on with a steady effort to arouse public opinion so that our news stands may be made safe and to the end that the general literary value of publications offered for sale may be raised.

It is felt, however, that the response from readers of the JOURNAL is not yet all that it might be. The JOURNAL again requests that its readers make an effort to investigate near at hand news stands, with a view to discovering exactly what the situation is. The JOURNAL will be glad to publish letters of a reasonable length dealing with the subject.

THE CHILD WELFARE CONGRESS.

The Canadian Conference of Child Welfare held a very successful annual congress in Winnipeg, September 11th, 12th, 13th and 14th. The Conference was successful from the point of view of numbers, and was particularly noteworthy in that it was found possible to hold meetings both for French-speaking and English-speaking delegates. The Conference was held jointly with the Association of Child Protection Officers, and many of the recognized national organizations dealing with the various phases of child health were represented. Miss Charlotte Whiton, the clever secretary of the Conference is to be congratulated upon the success which attended her efforts on this occasion.

Such conferences as this when they really bring out the various forces engaged in public health activities are of great value, and this conference will unquestionably do good. If there is one suggestion which might be made to the Executive, however, it is that an even greater effort than has been made in the past be made to see that all phases of the question of child welfare be brought out

and that an attempt be made to bring out the average citizen rather than the professional social workers. There is no doubt that work of the sort done by the average delegate attending such conferences as that just held is important. It is also true, however, that there are undreamt of possibilities which might be realized were child welfare made the business of the average man on the street rather than of the few.

One comes generally from a conference of professional social workers with somewhat of a feeling of despair. There is talk of jails, reformatories, disease, defectives, institutions and difficulties. There is too little talk of the constructive forces which may be relied upon to build up a new and ideal civilization—too little of ways or means whereby the general public may be drawn into a great and organized effort to do away with the evils that flesh is heir to by adopting the fundamental principle of prevention rather than organizing machinery for curative patch work.

Traditions as to the ever-present and increasing necessity for relief have to a large extent cursed the present generation. It is high time for us to realize that the more relief is necessary and the more defectives we have the more are we worthy of criticism. The modern watchword should not be "to care for the needy," but "do away with the needy." Such a motto engraved over the entrance door of every welfare and social workers' conference would be appropriate to the occasion.

GORDON BELL.

Last month the PUBLIC HEALTH JOURNAL printed a brief editorial on the death of Dr. Gordon Bell. Since then the JOURNAL has received the following appreciation which has been prepared for the American Public Health Association and the Canadian Public Health Association, by Dr. A. J. Douglas, of Winnipeg:

The medical profession of Canada suffered the loss of one of its most distinguished members when Dr. Gordon Bell died at Winnipeg, from septicaemia, after an illness of only a few days, on August 8th.

Dr. Bell was born at Pembroke, Ontario, in March, 1863—was educated at the Pembroke Collegiate Institute and the University of Toronto, obtaining the degree of Bachelor of Science from the latter institution.

He received his medical training in the University of Manitoba, graduating in 1890.

Dr. Bell as a young man had charge of a large asylum for the insane at Brandon, Manitoba, and later entered into partnership with Dr. J. W. Good, of Winnipeg, a well-known specialist on the eye and ear.

In 1895 the Provincial Board of Health of Manitoba was reorganized, and it was proposed to open a bacteriological laboratory. Dr. Bell was offered the position of Bacteriologist and went to Vienna, where he spent a year preparing himself for his new duties. On his return he was made Professor of Bacteriology in the Manitoba Medical College and later, Professor in charge of the Department of Hygiene, University of Manitoba.

He became a member of the Provincial Board of Health in 1896, and in 1916, on the retirement of Dr. R. M. Simpson, was made chairman of the Board.

He has been a member of the Canadian Public Health Association practically since its beginning, and was one of the members from Manitoba on the Executive Council.

At the time of his death Dr. Bell was unquestionably the leading figure in medicine in Manitoba, and possibly in the prairie provinces. The position he occupied was unique and the quality of the man himself was unusual and remarkable.

He had an extraordinary grasp of different departments of medical science, and might well have been described as a universal consultant.

He was continually being called to see patients by physicians, surgeons, eye and ear specialists, and dermatologists. He was a highly trained pathologist and bacteriologist, and was the leading expert in medico-legal cases in the province—his opinion was sought as an alienist. An authority and enthusiast on all matters pertaining to public health, no man ever did as much for the advancement of this cause in Manitoba. He was a leader in all progressive movements undertaken by the Provincial Board of Health, such as the establishment of the corps of public health nurses for rural districts, and the campaign against venereal diseases.

His sphere was not by any means confined to purely professional activities. An omniverous reader and a man of wide culture, he displayed an intense love for nature. He knew birds and animals intimately, was a fine botanist and experimented with plants, one of his favourite hobbies was the possibility of domesticating the native blueberry.

Always fond of outdoor life, in his younger days he went in for

sports, and on one occasion won the championship of Manitoba at trap shooting.

Dr. Bell was respected and admired for what he did, and loved for what he was. His character combined in a manner rarely seen, the finest qualities that a man can possess.

With his brilliant intellect, phenomenal memory and great powers of concentration and industry, he was modest almost to a fault; never obtrusive, never self-assertive, yet he loved the company of his friends, had a keen sense of humor, and was in great demand as an after-dinner speaker.

His standards of personal honour were the highest, his unselfishness and consideration for others were bounded only by his opportunities for service. The idol of the medical students and the younger generation of practitioners, there probably it not a medical man in Manitoba who is not indebted to him for something.

Of him it can truly be said that he gave his life for the good of his fellow-men. What the loss of such a man means to those he served so well cannot be estimated, but, if leaving behind a sense of personal desolation in the hearts of thousands, and an enduring memory, be a worthy ambition, few will have realized it in so full a measure as did Gordon Bell.

He is survived by his widow, a son and a daughter. The following editorial from the *Manitoba Free Press* will convey an idea of the estimation Dr. Bell was held in by the leading newspaper of Western Canada.

Manitoba Free Press. August 9, 1923.

THE LATE DR. GORDON BELL.

"It might be truly said of Dr. Gordon Bell, whose unexpected death yesterday has put this city in mourning, that he was the most beloved physician in Winnipeg. Indeed, there is no need to bound the expression by any professional limitations. It would be entirely just to say that Winnipeg has lost its finest citizen, judged by the qualities that count: beauty of character, elevation of mind, charm of manner, kindliness of disposition and devotion to public good.

"The beauty and worth of such a life as that of Dr. Bell's is not truly felt until it is lost. Dr. Bell has been for so long a time one of the centres of thought and action in our community that he and his services were taken for granted; it is only by the void that his

unostentatious life, that characer of perfect selflessness and utter devotion, that high talent dedicated to the public service, meant to this city.

"The best answer to the materialist, the cynic, the money-grubber, the scorner of public duty, the disbeliever in all motives save those that serve self-interest, are lives such as that lived by Dr. Bell. Not only are they answers to the doctrines of earth, but it is examples such as this which purify our civic life by lighting the fires that show the paths of duty and service to the generations.

A great end—what is better far—a good man has passed on, leaving the community a memory which it will long cherish and an example that will not lack emulation by young and generous souls following in his footsteps."

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An Industrial School for Epileptics and Feebleminded

By Arthur J. Morphy, M.D.

Demonstrator in Psychiatry, McGill University; Assistant in Neuro-Psychiatry, Royal Victoria Hospital, Montreal.

IN February, 1920, a division of the work in the Neurological Outdoor Department of the Royal Victoria Hospital, Montreal, led to the writer having the epileptics assigned to him, twelve or fifteen in number. They were of various ages, naturally, and their afflictions of varying nature and intensity. Their mentality varied much, likewise their intelligence, ranging from the epileptic imbecile up to the supernormal with intelligence clouded by recent attacks.

But, apart from their attacks and peculiarities, the great outstanding feature as applied to all, except the very young, was idleness. One man, it is true, an Englishman with a hemiparesis and general as well as Jacksonian attacks, was fortunate enough to have his attacks only at night, while during the day he continued his occupation.

But the disheartening feature was the idlesness and hopelessness of the growing boys and young men who could not go to school nor to work. And at that time there was nothing for it but to hand them out more bromides and watch them become more and more dulled from its use, so that one wondered which was the worse—the disease or the remedy.

Just about that time, however, we were able to get a supply of luminal, and the patients brightened up wonderfully and had fewer attacks. But the idleness problem remained. The implorings and upbraidings of the mother of one boy, a lanky lad of eighteen, drove the writer to the verge of distraction. "Sure, doctor, all the boy does is to lie on the kitchen floor and throw fits when he isn't looking at photo-play magazines. Sure I don't know what to do with him at all, at all."

The idea of an industrial school, conceived, matured and born within a few minutes, proved fruitful. Friends came forward with sympathy, help and money, and within two months the Montreal Industrial Institute for Epileptics and Feeble-minded was founded and incorporated, and a

small class of four boys and two girls actually started to work under a trained industrial worker.

The work has gone right along since then, the attendance gradually increasing from four to twelve. The equipment, which at first consisted only of reed to make baskets, now includes four hand looms of large size, on which rugs and curtains may be woven, a book-binding equipment, a large supply of reed, various tools, including a set for wood-carving, work benches, tables and chairs.

Basket-work is a staple handicraft by which a new pupil may learn to use his hands and to execute certain designs, in addition to making saleable articles. We could not very well do without it. Rug-weaving is more promising as regards material results. A well-woven rug is something a pupil may well be proud of, a useful and ornamental article which should last a long time, a staple article for which there is continual demand. Besides, a certain amount of interest attaches to the loom itself, and the necessary attention to it is good mental training. Machine work is, in the pupil's estimation, a distinct advance from pure hand work, and he bangs away at his loom with great satisfaction.

Book-binding was tried as an experiment, with comparatively poor results. The work is complicated, requiring precision and care, the very qualities lacking in deteriorated and feeble-minded pupils, and the finished work does not bulk as large or striking to the eye as a rug, for instance. All the careful sewing together of the leaves is hidden under the binding on the back of the book. The finished product may be pleasing to the eye, but it is attained at the cost of greater skill and patience than the average pupil of this kind possesses or is even capable of attaining.

So this work has been given up, temporarily, at least.

Wood-carving appeals to some pupils, and occasionally one discovers unexpected visual memory and even visual imagination. In the case of Harry, for instance, aged 20 years, mentality of low grade, intelligence quotient 46, subject to major epileptic seizures since infancy, has never gone to school on account of seizures, has learned to read short words, and has developed an astounding faculty for multiplication. Ask him how much is 18 x 24, for instance, and he gives correct answer within two seconds. So also with 18 x 18, 17 x 17, 99 x 16, and so on. Asked how he had accomplished this, he stated that he was always interested in hearing his sisters working at their arithmetical exercises at home, and that he had personally worked out a system in which he used 10 as a basis of calculation.

Under luminal therapy and diet regulation, Harry's attacks have diminished so much in number that sometimes three or four months pass without an attack, a condition of affairs unknown in his previous history.

He became very enthusiastic over wood-carving at the school, and executed some very creditable pieces of work under the teacher's supervision, and, more important still, he designed and carved out a beautiful piece of work during the summer, without supervision. His life is now happy, since he knows and feels that people outside of his own family, who are not always tolerant of his deficiencies and peculiarities of disposition, take an interest in him and are trying to make something of him. His outlook has brightened. He has an interest in something far removed from the monotony of a life spent at home helping his mother. He would not miss his one day a week at the school for anything.

His unusual calculating ability and his skill in wood-carving are striking points in the general scheme of a low-grade mind.

Other interesting cases could be cited, such as that of Stanley, a congenital luetic, with hemi-paresis, contracture of arm, subject to epileptic seizures, who learend to use the paretic hand making baskets and carving wood. He improved so much that he was able to take a position running an elevator.

But space prevents our citing other cases. We can only state that six boys have left the school and gone to work, one lad is practically self-supporting through doing work at home. He has very few seizures now, but his mentality is low and peculiarities of disposition somewhat marked, so that he is unfitted for regular employment. Another, when last heard of, had gone to work on a farm. One has gone to work for an undertaker and gives vivid and picturesque descriptions of his work.

Our general plan is to teach the pupils how to work, to develop their intellectual powers as far as possible by varied occupational work and by academic instruction, to try to inculcate ideas of the benefit of continuous work, its discipline and habit-forming power; to overcome their physical disabilities as far as possible, for instance, in urging on a boy with semi-paralysed hand; to create an interest in work for its own sake, apart from the monetary reward; in brief to convert these comparatively hopeless, useless human beings into happy and useful people.

But our work among epileptics and feeble-minded who are suitable for the industrial school is only part of a large problem. The growth of the special clinic for epileptics from twelve or fifteen cases in 1920 to about seventy-five cases at present brings us into touch with a problem of national importance. There is no more hopeless, helpless, pitiable case than that of the confirmed male adult pauper epileptic, subject to severe seizures, and generally deteriorated mentally, but not sufficiently to be classified as insane. There is no place for him. Not being insane, he cannot be sent to an asylum. No hospital nor institution in this Province at least will receive him. Nobody wants him. Nobody can or will employ

him. He is an outcast. He has no means of self-support. He is even dangerous. Crimes of violence have been committed in the dream states of epilepsy.

An instance of the problem presented by a severe case of epilepsy is the following: J. G., ex-British soldier, had served in the Boer and Matabele wars. Came to Canada twelve years ago. Worked on farms in various places, west and east. Began to have epileptic fits ten years ago. Found it more and more difficult to remain any considerable time in any place. Discharged on account of attacks. At last, he could not find employment. "'Nobody will 'ave me," he said. The Salvation Army sent him up to the clinic. The refuge where he had been lodging turned him out. The police took him in, and kindly allowed him to sleep in a cell every night for three months. When the warm weather came, they turned him out. He sat up all night in a park. Next day he came to the Clinic, and our Social Service took him in hand. After several hours of work, the Social Service prevailed upon the Refuge to re-admit him. Meals had to be provided for. Money was procured from charitable organizations to provide for meals for six months. The man spends his days at the Salvation Army and nights at the Refuge. He is willing and anxious to work. Last week a farmer near Montreal was induced to take him on board wages. After three days he discharged him, as he had had a severe attack. So J. G. is back on our hands again. This is an extreme case and there are others, but we need not multiply instances.

One more, however, may be cited. A. B., a Russian Jew, aged 52, has been subject to major attacks for about twelve years. For the past nine years he has been supported by the Jewish Charity Federation, being given eight dollars per week. He is a powerfully built man, accustomed to hard labour. His blood and spinal fluid are negative to Wasserman test. His urine and blood pressure are normal. He complains of continual headache. There are no nerve paralyses, and the ocular fundi are normal. Luminal and bromides have very little effect. He has a seizure every day. Cerebral neoplasm has been suspected for years past, but no positive evidence found.

He is not fitted for hard labour, but would be better if doing light work. He is unsuitable for the school on account of his severe attacks. The total cost of this patient to the Jewish Federation during the past nine years is nearly four thousand dollars. Under suitable conditions, he could have earned at least enough to provide his food.

The ideal place for patients such as the two above described is a farm colony for epileptics.

The Quebec Government have the project under consideration, we are informed, and we who are in touch with the epileptic problem hope that the project may soon be carried into effect.

Is the Nationalization of the Medical Profession Desirable?

By J. Heurner Mullin, M.D., Hamilton*

(*Continued from last issue*).

Many of the public and some of the Medical Profession often presume that the introduction of a new cult indicates a supposed deficiency in the methods of regular medicine of the day. Too often the cult indicates the neglect to use procedures which, in less dramatic form, are available for use by our Profession. Medicine, like other sciences, will be always subject to change with the introduction of new knowledge, but only so rapidly as this new knowledge may be proven to be reasonably accurate and valuable. When the cult, taking advantage of this commendable delay, and in handling a limited field of practice may apparently show results, the public should look for more information before it accepts the cult as a complete new system applicable to all manner of disease. Medicine in the past has benefitted by the introduction of new information by its members, either those in practice, or pure scientists, and will surely in the future absorb procedures, even those being glorified by the present day cults, as soon as these can be shown to be of definite and proven value. It is certainly up to the public themselves to see that through their legislators, they get protection from the incompetent, whether he be one of our own body or one of the many irregular groups. We should not claim the right to dictate in such matters but surely with the experience which has come to us through years of study puts us in a position where we may be permitted to advise.

There can be no doubt that the medical profession will have to assume the responsibility of cleaning house before the public will pay very much attention to their advice regarding any change in the present system. There will have to be some method devised which will eliminate from our ranks and protect decent society from that high grade criminal who merely employs his medical knowledge for graft and imposture. Although suspicions may be comparatively well founded this will likely be found a difficult task. Members of regularly constituted Medical Societies must, in the interest of the public, be given some greater protection against legal action for libel or slander when they investigate charges, even of those of a less serious import.

There should be provided some "reporting-house" system from which the public can get accurate information regarding the qualifications and ability and integrity of our members. There should be some method, possibly periodical examinations indicating that these members are keeping up to date. I do not believe that it is going too far to say that at the present time, the public runs greater risk in trusting themselves to certain of our members who refuse to attend Society meetings and otherwise keep themselves informed, than they may even take in going to the irregular and out and out quack.

The public should be informed regarding conditions which, in recent years, keep members of our regular Societies abreast of the times. Those who sell Medical Books tell us that in the last fifteen or twenty years there has been a tremendous change on the part of the profession generally throughout this country to buy and read the newer Medical Works. There is certainly no dearth of material presented. As in ordinary life, with facilities of transportation and other measures, we find it much easier to interchange our knowledge and experience in personal contact. A larger percentage of our members are continuously taking refresher courses at leading teaching centres and in addition to this we have been able, during the past few years, to introduce into Ontario a programme of Post Graduate education which has not been equalled in any part of the English-speaking world. Under this plan teachers from our three Provincial Universities are being sent to many of our local and county Societies. We know this alone has played a tremendous part in increasing their own activities in the interest of Scientific Medicine.

The public in Hamilton are not fully aware of the excellent work which is being done by our local Society. There are few places of similar size in the American Continent that can equal our record. In recent years we have been able to persuade many experts from the leading cities on the Continent to come over and help us. You should certainly be told that during the past year more than sixty addresses were given by guests in addition to work presented by our local members.

In no Society will you find members more friendly in their daily work, nor more free from antagonistic cliques. Our record as indicated by the work conducted in the Babies' Dispensary plainly shows that many of our members are willing to recognize their duty in this form of communal work. More than twenty-five per cent. of our medical population have already shown their interest

by working without pay as members of that clinic staff, while in no other city in America can it be shown that ten per cent. of the medical population in the like manner has been actively interested. With some encouragement from the public, and officials, this percentage can be very materially increased, and the principle applied to other forms of desirable communal work.

It should be pointed out that our various public clinics, no matter how thoroughly they have been organized, have one decided weakness which the system can never overcome. The doctor in attendance at these clinics knows nothing whatsoever of the actual conditions of the home of the patient, nothing of the environment, physical and mental and little regarding their possible financial capacities. The social worker or visiting nurse endeavours to replace this deficiency with certain written information, but the frequent changing of these nurses or workers in the life of the patient, only emphasizes these limitations.

We should strive for an ideal in the future, which will instead of having a few paid officials with the assistance of others on part-pay, have an ideal which will include an organization of our profession for service up to one hundred per cent. of our membership. We are merely touching on the fringe of preventive medicine. The golden age to many appears to be so far away as to be outside the realm of practical politics but this is, on close examination, not the case. We must admit that a start has already been made and that much has been accomplished.

Undoubtedly the major share of the work of the practitioner in the future will consist of activities on the preventive side for which he will be well paid. Supervision of the expectant mother, the care of her normal infant, supervision during school life and later periodic routine examination for all adults will become a recognized procedure for all in dealing with their own doctor.

In the case of those who can well afford to pay for it, this procedure in a few cases is being adopted to-day and should be encouraged in every possible way by informing the public concerning the advantages to be gained. Should it be possible to correct our economic system in such a way as to give every worker a decent living wage, he also would then be able to buy this service in the same manner in which he would pay for his ordinary medical attention, making his selection according to his individual preference as he now buys his groceries and his clothes. If we could modify housing conditions and give him decent accommodation at a normal rent sufficient for a reasonable amount of recreation, the oppor-

tunity of putting something away for his old age, he would be relieved of many anxieties that now add to his infirmities. Until this utopian age comes about I feel confident that the medical profession can and will be of the greatest assistance in the readaptation to our present day requirements, providing they are given a reasonable share in the management of the same.

In an attempt to remedy the failures in the present Medical Health Insurance Act in England, the British Ministry of Health appointed a special committee to investigate the whole problem of Medical Service including Hospitalization of the sick public. In May, 1919, the committee submitted an interim report which is worth while considering in detail.

This report recognized the following principles:—

(1) Measures for dealing with health and disease become, with increasing knowledge, more complex, and therefore, less within the power of the individual to provide, but rather require combined efforts.

(2) As complexity and cost of treatment increase, the number of people who can afford to pay for a full range of service diminishes.

(3) Preventive and curative medicine cannot be separated on any sound principle, and in any scheme of medical services, they must be brought together in close co-ordination. They must likewise be both brought within the sphere of the general practitioner, whose duties should embrace the work of a communal as well as individual medicine.

(4) That the home does not always offer the best hygienic conditions.

(5) That it is impossible in cases requiring elaborate study to get along without complete X-ray and Laboratory facilities.

(6) That in order to get the best results, the combined efforts of public health administration should be under one organization and centralized in the same institution.

(7) Any scheme for the co-ordination of medical services must be available for the benefit of all classes in the community.

(8) The services may be classified—(1A) Domicilary, (1B) Institutional, (2A) Individual, (2B) Communal.

(9) Services should include those of the doctor, nurse, dentist, pharmacist, and should include provision for X-ray and other Laboratory facilities, and an Ambulance service.

They would therefore name this Institution the Health Centre, containing all of these various departments, both preventive and curative in one Organization. These Health Centres would be divided into two types—(A) The Primary, denoting more simple, (B) The Secondary, the more specialized service.

Primary Health Centre: Round this would be grouped all the services of preventive and curative that would use this as a base. Both the Institutional and the Domicilary service would be conducted by the general practitioner of the district, with the aid of a nursing service and visiting consultants who would be sent in

from the Secondary Centre. The Health Centres would be located mostly in Town or Village and the patients would retain the services of their own doctor.

Secondary Health Centre: These would be manned by efficient half-time consultants and more elaborate diagnostic equipment. The patients would be entirely under the control of the consulting staff. These would of course be located in the larger cities.

The consultants from the Secondary Centres would make periodic visits to the Primary centre and would be on call in case of emergency.

If on the visits of a consultant to a Primary Centre it was discovered that the case required the study of more than one member of the consulting staff or in the case of operations, more qualified surgeons, the patient would be moved to the Secondary Centre.

During their stay in such Secondary Centre every encouragement would be given to the attending physician, from the Primary, to pay more or less frequent visits in order to watch the progress of the case and in order to be in better position to follow up the treatment on their return home.

In the Primary Centre, in addition to wards, operating room, X-ray and laboratory rooms, dispensary, baths and equipment for massage, electric and other forms of physical therapeutics, there would be a common room which would serve as a meeting place for the general practitioner of the district; a place for preserving clinical records. By frequent meetings, study of cases and interchange of knowledge aided by the periodic visits from the consulting staff, the medical profession of the district would be kept abreast of the times.

In addition to this it is suggested that each of these Secondary Centres in the whole district should be closely linked up with one of the established so-called teaching hospitals or medical schools. To such schools the medical men of the whole district could pay more or less frequent visits for refresher courses or on the other hand the staff of such schools should be available for going to these Primary Centres and assisting in a Post-Graduate education.

The alternative of a whole-time salaried service for all doctors has received their careful consideration, and they are of opinion that by its adoption the public would be serious losers.

> "No doubt laboratory workers and medical administrators who do not come in personal contact with the sick man would, with advantage, be paid entirely by salary.
>
> The clinical worker, however, requires knowledge not only of the disease, but of the patient; his work is more individual, and

> if he is to win the confidence so vital to the treatment of illness, there must be a basis not only of sound knowledge but of personal harmony. The voluntary character of the association between doctor and patient stimulates in the former the desire to excel both in skill and helpfulness. It is a true instinct which demands "free choice of doctor," and there should be every effort, wherever possible, to make this choice a reality. In no calling is there such a gap between perfunctory routine and the best endeavour, and the latter, in our opinion, would not be obtained under a whole-time State salaried service which would tend, by its machinery, to discourage initiative, to diminish the sense of responsibility, and to encourage mediocrity."

In addition to the Secondary Centre in any district, there would be created specialized hospitals such as those for Tuberculosis, Epilepsy, and the Feeble-minded. Orthopedic Recuperative Centres and Homes for the Incurables. Such as these would be created as the occasion demanded.

In our country little attention has yet been paid to the question of hospitalization of our sick public, except in a few of the larger centres. In the Western Provinces they have greater progress than we have in the East. But even there, large numbers of the population are still far removed from adequate hospital facilities.

Our Post-Graduate programme in Ontario has started some men thinking. Acting in co-operation with the officers of the Ontario Division of the Red Cross we now have a committee which has under way a complete study of the facilities now available and our requirements.

Should it be possible to imitate the proposed British plan, and acting either independently or connected up with Provincial Health Departments, dot the Provincial Map with small community hospitals with X-ray and Laboratory facilities, there can be no question that the type of service provided would be vastly improved for the great rural community who produce the bulk of our wealth.

Great care will be necessary in providing for the administration of these local units, to leave provision for local control to prevent the abuses of a centrally organized and autocratic secretariat. Machinery must be provided which will easily remove the incompetent or the bombastic irrevelant orator who is little better than the mere poliical heeler who considers his job safe for life. In the great United States too many of such officials in their various activities are disgusting to the fair-minded Britisher who has been brought up imbued with fundamental principles of individual rights. Too long in office their arrogance increases as their efficiency withers. Soon it is too evident that their obvious activities are merely connected with the anxieties of salary increases.

This Province has several excellent men in Public Health work. Under their administration this work has advanced far beyond the stage when the Irish policeman methods were in vogue, but we have no guarantee that their successors will always be of the same high standard. To be truly successful these officials, nominally in charge, must understand the fundamental principles of organization and in a generous spirit of co-operation must make use of every available group who with or without definite scientific training, can assist in the development of the ideals possible in any community.

Our larger hospitals are specially organized departments of public service. Some would place a lay-man in charge of these and emphasize the essentials of business economy in administration. But hospital service is more than this. The ramificating features in hospital affairs, which require a medical viewpoint are now so evident that we definitely recognize the necessity for developing medical men as experts in this field. The medical superintendent who is beyond fear or favor or possible consultant fees is absolutely essential in supplying to the lay board and through them to the public at large, reliable information regarding the observation of the requirements of those scientific standards which are now considered essential.

Lay-boards of such hospitals have not fulfilled their whole duty unless they are in a position to continually give guarantees to the public which will inspire their complete confidence in the work conducted therein.

Probably the great Flu epidemic, more than anything in the history of our time, more definitely brought home to medical profession of this city and the public, the necessity and absolute duty of the community to provide adequate health organization. During the progress of this epidemic, our local medical Society appointed a special committee to assist the members of the Board of Health in dealing with the situation. In spite of the adverse criticisms of a few the committee had reason to believe that the great bulk of our citizens heartily supported the measures taken and as a whole the results justified the means adopted.

This committee in submitting the final report of the year to our Society recommended that in order to prevent a repetition of such an outbreak, that the City, after an exhaustive study, should adopt means which would best guard the well being of its citizens. It considered that the only satisfactory method to make any such study would be to have a complete survey of all conditions.

This survey should include the study of the necessity for increased hospital accommodation and connected therewith, increased Laboratory facilities. It should cover all the problems of general sanitation, housing, parks, and playgrounds, tuberculosis, venereal disease, child welfare, school inspection, district nursing, poor relief, care of the aged and incurable, and a complete system of social service in so far as it affects any of these departments.

It had previously been brought out in a discussion earlier in the year that we were not entirely satisfied with health administration in this city. It must be equally evident to-day that a complete survey would reveal conditions which are unsatisfactory; that with many different agencies interested in various phases of these problems, on the one hand there may be unnecessary overlapping or that desirable activities are entirely overlooked and in other ways there is a sad lack of co-ordination.

Let any citizen who doubts the necessity for such a survey, quietly sit down and paper in hand estimate the cost of health service in our City of to-day. This estimate should include the gross amount paid out of public funds and in addition to this the amount which is paid by individual citizens. The former would include the amount paid for the maintenance of our public health department, the hospitals, school inspection, tuberculosis and all of the semi-medical charities. The later would include fees paid to the doctors, money spent on drugs, and nursing serivce. To the former we might stretch the point and add funds for maintaining our parks and playgrounds and all forms of amateur athletics. We might even add the cost of commercialized sport. To the latter we might also include loss of wages through illness and money lost to the community during the period of convalescence when men are returned to work at a lower standard of efficiency. Some would go even further and include money spent for relief dependent on illness and similarly other factors less closely connected with the health problem, such as the cost of crime and sanitation.

I have discussed the matter with friends who have had a wide knowledge in municipal and community affairs and I am assured by those who ought to know that the sum total would run anywhere from three to five millions. Is it possible in any business which has an annual spending budget that this huge amount would exist without the periodic examination and careful audit of their affairs or a regular department of cost accounting, and redistribution of funds in the interests of efficiency of management and organization for the real object in view.

In Cleveland such a survey was made two years ago and already at this early date they realize that the value received has many times repaid them for the actual cost.

I am convinced that if such a survey were undertaken by a competent investigator he could show very positive reasons both for the sake of efficiency and economy, in favor of the centralization of all our activities under one single Health Commission. Such a Commission need not entirely usurp the activities and duties of independent public boards or voluntary agencies now present in the field and under whose wise and efficient direction their various activities are conducted. It would merely act as a Board of Control for all. With a definite proportion of the tax rate at their disposal, they could distribute funds available.

In order to be more efficient than our present system, this Commission should be more of a permanent character than our present "City-fathers." They might easily be selected or elected in rotation, serving for a definite period of years according to the number on the Board.

As an essential feature of such a Commission there should be an appointed chief, a Medical man of the highest professional standing, one who would continually command the respect of the medical profession and the public at large.

In addition to the Health Commission there might be created an Advisory Health Council much larger in size, including therein two or more representatives from each of the various Boards covered by the plan. The more or less frequent meetings of such a council, in formal or informal session, would add much to the efficiency of each branch of work. Each group would more thoroughly understand the other's activities and could undertake effective means to prevent overlapping of any semblance of incoordination.

As Goldwater says, things can be done in the city of 100,000 which are impossible in the Metropolis or in a very small community. We have many public-spirited citizens and social, business and other organizations interested in the welfare of this Community who could be easily enlisted to bring these things about. Surely our citizens deserve the best service that it is possible to provide.

Let us again refer to these early War promises. No one can refuse to admit that things are topsy turvy in the world to-day, if not close to actual financial chaos. Do not many of the monied class exhibit the same arrogance. Are not often the men in financial control, though ignorant of true economics, as despotic as ever

in the big business activities? Are there not many tilts in the tournament of life to-day more cruel and far-reaching than those of spear and armour in early medieval days? If those who would criticize the occasional member of our profession whose ideals are tinged with interests in commercial advantages, I would ask, why should they expect this human of to-day to rise out of the social environments of his time?

And so the world struggle goes on. The future must decide whether before the end we will see capital and labour on opposite sides in a bitter and bloody revolution, or that the sky-pilots may persuade us to accept, in place of the present system of self-interested commercial rivalry, some revision of our standard of ethics whereby we may learn to carry on according to the highest ideals of morality in our relations to our fellowmen.

In Hoover's recent essay on American Individualism, he comments on the ability of any social system to evolve within itself in order to apply new tools of social, economic and intellectual progress, in a sane and orderly maner. Quoting from this essay we find:—

> "There is developing in our people a new valuation of individuals and of groups and of nations. It is a rising vision of service. Indeed, if I were to select the social force that above all others has advanced sharply during the past years of suffering, it is of that service—service to those with whom we come in contact, service to the nation, and service to the world itself. If we examine the great mystical forces of the past seven years, we find this great spiritual force poured out by our people as never before in the history of the world—the ideal of service."

No doubt many in this audience have noticed the tremendous influence for good in such organizations as the Rotary, Kiwanians, Kinsmen, Gyro, and the Lions. Possibly when all the members of these organizations actually practice the principles which they preach and when they reach out and teach these principles to other members of the community, it may be possible even in our day and generation to expand our sense of loyalty to our own immediate families, so that it will include all mankind.

The question of method of service to the sick is not merely a medical but also an economic or social problem. Any attempt at its permanent revision must go hand in hand with the readjustment of the elements in our social fabric, and not merely a plan enslaving one group in a Nationalization scheme. There has never yet been such a scheme tried out in practice or publicly discussed which gives to the individual a reasonable amount of liberty or the best service which it should be possible to provide.

The plan to be worked out must recognize that each individual in society has communal as well as personal obligations. Any discussion of his right and privileges must discover the due proportion which each of these obligations bear to one another. No plan can be arbitrarily presented at the present time, but should be gradually evolved. It is to be hoped that all of us will be able to rightly interpret the basic ethical requirements, in our efforts, to develop some plan in the near immediate future.

The portions of the above paper in smaller type consist of reviews and quotations from the various sources indicated and are presented without comment or endorsation.

*As a member of the Committee on Interrelations of the Ontario Medical Association, I am under obligation to state, before saying anything dealing with this subject, that I personally assume responsibility for statements made and that in no sense do I present any official communication from this organization.

Diphtheria Mortality

RUGGLES GEORGE, B.A., M.D.
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(*Continued from last issue*)

This hospital receives most of the diphtheria cases among the 600,000 inhabitants of Copenhagen. During this period, serum treatment was always applied on a large scale, the serum being usually injected intramuscularly. Since 1916, the doses administered have been constantly increased until severe cases in 1921 were given 200,000 units. Experience showed that the larger the dose of antitoxin, the better the results. The details are shown in the following table:—

TABLE VIII.

CASE FATALITY FROM DIPHTHERIA —(FAUCIAL CASES ONLY)— BLEGDAMSHOPITAL, COPENHAGEN, 1916-1921.

Year	Cases	Deaths	Deaths per 100 cases
1916	657	10	1.5
1917	869	23	2.6
1918	968	14	1.4
1919	1,497	23	1.5
1920	1,977	17	0.86
1921	1,821	15	0.82

The foregoing indicates a tremendous improvement in the treatment of diphtheria following the introduction of antitoxin. Of this improvement there is no doubt but the rate of reduction has not been maintained during recent years. A good illustration of this slow progress in diphtheria control during recent years is given by a study of the fatality rates from diphtheria in Chicago from 1912 to 1919, which show that, while there is a slight fluctuation from year to year, there has been no appreciable decrease in the case fatality, the fatality rate of 11.31 per cent. for the four years, 1916 to 1919, being almost the same as for the preceding four years, when it was 11.63 per cent. From a study of 147 fatal cases observed in the Durand Hospital, Chicago, during the period 1913-1920, Weaver has come to the conclusion that the high death rate is partly due to neglect by the parents and partly to inefficient professional care which includes (a) failure to cultivate sore throats, (b) failure to give antitoxin at once without waiting for

the result of the culture, or in the presence of a single negative culture, (c) failure to follow patients with a sore throat after seeing them once, (d) insufficient doses of antitoxin, (e) failure to get the antitoxin quickly in contact with the circulating toxin owing to the employment of subcutaneous injections instead of the intramuscular or intravenous method and (f) confusing diphtheria with other conditions such as mumps or quinsy.

The case fatalities here noted are chiefly those of hospitals, because it is only in hospitals that accurate records are kept of the relation between cases and deaths. An attempt to calculate a case fatality rate for an entire community is always foiled by the incomplete notification of cases. Deaths from diphtheria are reported in larger proportion than the cases which gives a case fatality rate higher than actually happens.

Case Rates.

Case rates give no evidence of decline as is shown by the following diagram (Fig. 9). At first glance one might be led to suppose that the incidence of the disease was shown by the case rate. To a certain extent this is true but the case rate is based on the number of cases notified and notifications are never complete. The basis of notification is diagnosis and there is almost certainly a progressive increase in the proportion of correct diagnoses made, owing to increased laboratory facilities for diagnosis and the increasing appreciation of the diphtheritic nature of many cases that formerly would have been considered simple sore throat.

The reasonable conclusion seems to be that the incidence of diphtheritic disease is not on the decline. We probably has as much diphtheria to-day as occurred a generation ago. Why the diminished mortality but no decrease in the prevalence? Antitoxin must be given the credit for the reduction in mortality. Antitoxin relieves the symptoms of the disease and the patient recovers. The mortality statistics of antitoxin and pre-antitoxin periods prove this beyond a doubt. (See Fig. 5.) But the antitoxin itself has no direct effect upon the number or the virulence of the diphtheria bacilli in the throat or nose of the patient. Virulent diphtheria bacilli may persist for over a year in the noses and throats of patients who have recovered completely from the clinical signs of the disease. Virulent diphtheria bacilli may also be found in the throats and noses of those who have never shown signs of the disease. To these human carriers must be attributed the continued prevalence of diphtheritic disease. Antitoxin does not touch the

CASES OF DIPHTHERIA, 1908-1920

Vertical Scale:—one inch equals 250 cases per 100,000 population

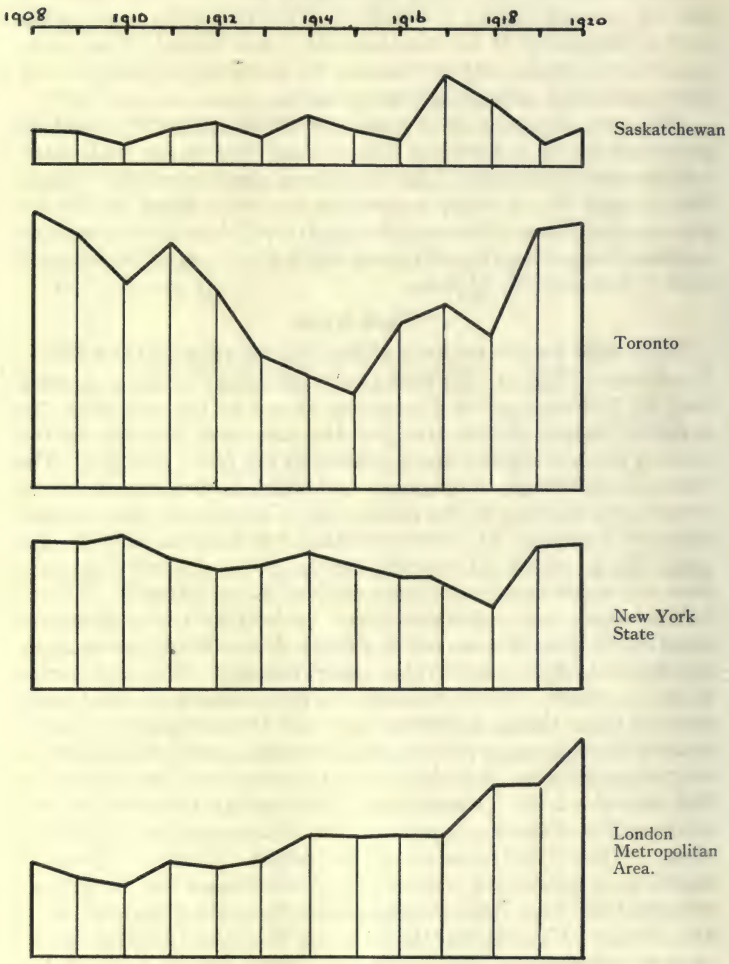

Fig. 9.

carrier and the continued prevalence of diphtheria should not be cited as an example of the failure of antitoxin. Antitoxin cures the disease but the elimination of carriers is not antitoxin's job. No effective means are known to eliminate the carrier, at least no effective means that may be generally applied. Isolation of detected carriers and either time or tonsillectomy may render them harmless but the missed case and the carrier-at-large will continue to sow the seeds. The extended use of toxin-antitoxin should reduce the number of susceptible children and the control of the patient remains the first line of defence, but the question—"Is dip. doomed?" must still be answered in the negative.

Seasonal Prevalence.

Diphtheria is present during the whole year but most of the cases and deaths occur during the colder months, as is shown in Table IX. and Fig. 10. In Toronto the cases are least numerous from May to August. With September the diphtheria season opens and the cases increase rapidly to a peak in December followed by a decline during the late winter and early spring.

The record of New York City during 1920 shows December to be the peak month for cases followed by a peak for deaths in February.

The records of the London Metropolitan Asylums Board give quite a different curve. From January to August there is a distinctly low level, followed by a moderate rise from September to November and a very sharp peak in December. This December peak is confirmed by a study of the records of the Metropolitan Asylums Board during the 33 years from 1889 to 1921. In these years the number of diphtheria patients in the Board's hospitals attained the maximum in the following months:—

November	in 12 years	August	in 2 years
December	in 12 years	February	in 2 years
October	in 4 years	July	in 1 year

A peak month apart from mid-winter is explained by the fact that an epidemic, once started, tends to run its course irrespective of season.

The seasonal incidence of diphtheria is probably due to a combination of several factors. During the autumn children are more indoors, they are congregated in schools and are more subject to all infections of the nose and throat.

TABLE IX.

SEASONAL PREVALENCE OF DIPHTHERIA AND CROUP.

Month.	M. A. B. Hospitals Toronto, Canada, 1889-1918.		M. A. B. Hospitals London, England, 1907-1921.		New York City, 1920.			
	Cases	Per cent.	Cases	Per cent.	Cases	Per cent.	Deaths	Per cent.
January,	2,243	10.56	11,700	8.13	1,492	10.5	136	13.0
February,	1,733	8.15	10,500	7.30	1,229	8.6	149	14.3
March,	1,670	7.86	10,950	7.61	1,364	9.6	136	13.0
April,	1,388	6.53	9,200	6.39	1,345	9.5	113	10.8
May,	1,353	6.37	9,200	6.39	1,308	9.2	81	7.8
June,	1,573	7.40	9,100	6.32	1,246	8.8	79	7.6
July,	1,322	6.22	9,350	6.50	817	5.8	41	3.9
August,	1,273	5.99	7,900	5.49	522	3.7	35	3.3
Septem'r.,	1,614	7.59	11,450	7.95	522	3.7	29	2.8
October,	2,141	10.07	13,950	9.69	934	6.6	44	4.2
November,	2,437	11.47	13,850	9.62	1,535	10.8	86	8.2
December,	2,500	11.77	26,750	18.59	1,852	13.1	116	11.1
Total,	21,247	100.0	143,900	99.98	14,166	99.9	1,045	100.0

Rural and Urban Incidence.

How does the city compare with the rural district?

Dwellers in congested districts suffer repeated exposures to the diphtheria bacillus. These exposures either cause actual clinical diphtheria or may produce mild infections of the mucous membranes which are not recognized as diphtheritic, but which may lead to the gradual development of antitoxic immunity.

A greater proportion of city youths than country youths show immunity to diphtheria. Schick tests were made on 333 young men between the ages of 17 and 21 years on the first day of their attendance at a military training camp. These young men were drawn almost equally from city and rural homes. The results of the Schick tests are shown in Table X.

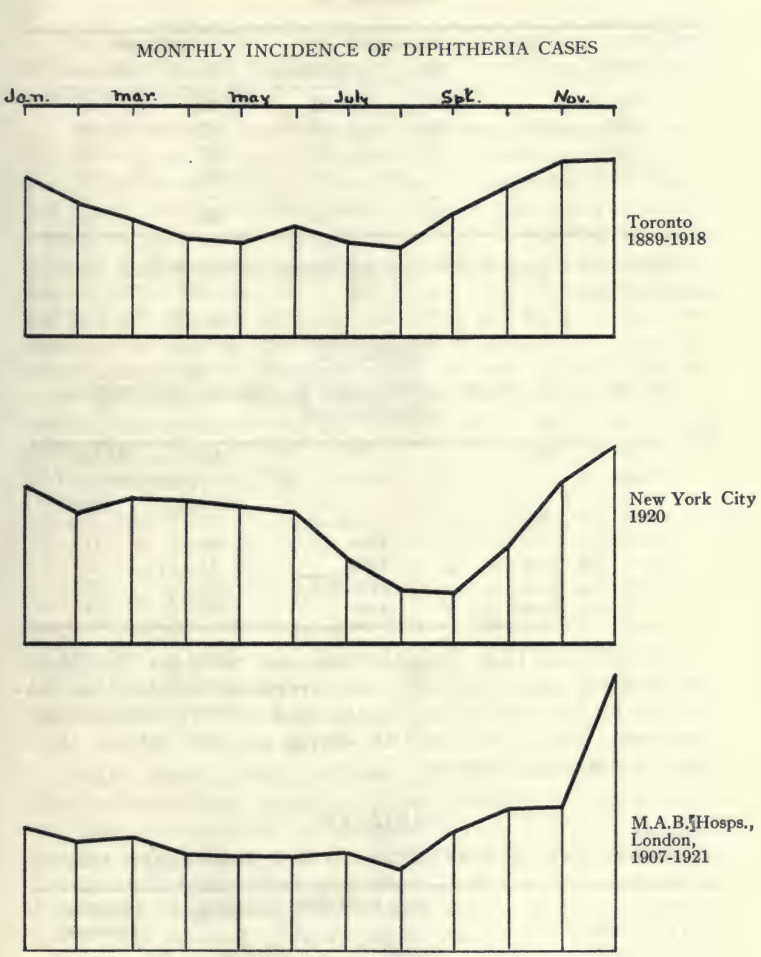
MONTHLY INCIDENCE OF DIPHTHERIA CASES
Jan.
Mar.
May
July
Sept.
Nov.
Toronto
1889-1918
New York City
1920
M.A.B. Hosps.,
London,
1907-1921

Fig. 10.

TABLE X.

Community	Susceptible		Immune	
	No.	Per cent.	No.	Per cent.
Rural	121	62	73	38
2,500	92	52	85	48
10,000	74	54	62	46
100,000	107	51	104	49
	394	55	324	45

Death rates from diphtheria are higher in urban than in rural communities.

TABLE XI.

DEATH RATES FROM DIPHTHERIA IN URBAN AND RURAL COMMUNITIES.

Place.	Period	Ratio per 100,000 population.	
		Urban	Rural
Ontario	1919	24	11
New York State	1922	14	9
U. S. Reg. Area	1910-1914	22	15
U. S. Reg. States	1890	122	55

The following table indicates that case rates are like death rates in being higher in urban than in rural communities, but the case fatality rate is the same in both urban and rural communities. These rates are only for one state during one year but in a state where notification is efficient.

TABLE XII.

DISTRIBUTION OF DIPHTHERIA IN NEW YORK STATE, 1922.

Community	Ratio per 100,00 population		Deaths per 100 cases
	Cases	Deaths	
Urban	212	14	6.8
Rural	134	9	6.8
Total	176	12	6.8

Age and Sex

The incidence of both morbidity and mortality from diphtheria varies greatly at different ages and varies directly with the susceptibility at different ages.

The Schick test determines relative susceptibility to diphtheria by showing the presence or absence of antitoxin in the person tested. A recital of the details of the test is beyond the scope of this thesis, but the results of many thousand tests confirm common experience concerning susceptibility to diphtheria, especially in its relation to the ages of greatest susceptibility. It is found that infants under the age of six months are immune, provided their mothers are immune, and that this period of congenital immunity continues as long as the infant is fed on the breast. From six months susceptibility increases up to the age of two years and then gradually diminishes, though the diminution is at first so gradual that the period from six months to five years may be considered the period of greatest risk. This is illustrated by the study of Park in New York City.

Under 3 months	15	per	cent.	susceptible
3 to 6 months	30	"	"	"
6 to 12 months	60	"	"	"
1 to 2 years	70	"	"	"
2 to 3 years	60	"	"	"
3 to 5 years	40	"	"	"
5 to 10 years	30	"	"	"
10 to 20 years	20	"	"	"
Over 20 years	15	"	"	"

The foregoing refers to residents of New York City. In country districts the average percentage of susceptible persons is probably still greater. Immunity to diphtheria is most likely the result of small and repeated doses of virulent diphtheria bacilli, always subinfective or causing infection so slight that it is not recognized as diphtheria. Such doses of bacilli are bound to be more common in towns than in rural districts. This leads to the belief that the proportion of susceptible persons in the whole population is in excess of that indicated in the foregoing table.

The age incidence of cases corresponds in a general way to the susceptibility at different ages as shown by the Schick test. Table XIII. shows the age distribution of 5,644 cases admitted in 1921 to

the hospitals of the Metropolitan Asylums Board, London. Less than 2 per cent. of the cases were in infants. Thirty-one per cent. of the cases occurred in children under the age of 5 years and the first nine years of life included over 70 per cent. of the cases.

TABLE XIII.

DIPHTHERIA CASES BY AGE AND SEX, HOSPITALS OF METROPOLITAN ASYLUMS BOARD, LONDON, 1921.

Age	Male	Female	Total	Percentage of total cases
Under 1 year	136	101	237	1.91
1 year	451	397	848	6.82
2 years	376	378	754	6.06
3 years	453	451	904	7.27
4 years	565	554	1,119	9.00
Total under 5	**1,981**	**1,881**	**3,862**	**31.06**
5-9 years	2,275	2,619	4,894	39.37
Total under 10	**4,256**	**4,500**	**8,756**	**70.43**
10-14 years	880	1,217	2,097	16.87
15-19 years	240	398	638	5.13
20 and over	268	673	941	7.57
Total	5,644	6,788	12,432	100.00

Table XIV. gives the age incidence of cases in Toronto during 1922. This is similar to Table XIII. except for the higher morbidity rates under the age of one year and over fourteen years. As many cases occurred in persons over fourteen years as under five years.

TABLE XIV.

DIPHTHERIA CASES BY AGE, TORONTO, 1922.

Age	Percentage of total cases
Under 1 year	4
Under 5 years	29
5-9 years	41
10-14 years	11
15 and over	29

The same problem may be studied in a little different way in the following table which shows the number of deaths from diph-

theria at different ages and for the sexes in Ontario during 1921. The highest mortality occurs in the second year, with a regular decline to the fifth year and a sharp decline from 5 to 9 years. Over the age of 14 years, the mortality is insignificant.

TABLE XV.

DEATHS FROM DIPHTHERIA AND CROUP BY AGE AND SEX, ONTARIO, 1921.

Age at Death	Male	Female	Persons	Per cent.
Under 1 year	21	12	33	5.06
1 year	23	23	46	7.06
2 years	40	29	69	10.58
3 years	26	38	64	9.82
4 years	37	26	63	9.66
Total under 5	**147**	**128**	**275**	**42.18**
5-9 years	120	130	250	38.34
10-14 years	37	46	83	12.73
15-19 years	7	3	10	1.53
20 and over	11	23	34	5.21
Totals	322	330	652	99.99

The following diagram (Fig. 11) shows the percentage of total mortality due to diphtheria in the different age groups. This diagram shows that nearly sixteen per cent. of the total mortality due to diphtheria occurs in children from five to nine years. Comparison with Tables XIII. and XIV. shows that the percentage mortality at different ages corresponds with the age incidence of the cases.

PERCENTAGE OF TOTAL MORTALITY DUE TO DIPHTHERIA AND CROUP PER 100 DEATHS FROM ALL CAUSES, UNITED STATES REGISTRATION AREA, 1910-1914.

Fig. 11.

Deaths from diphtheria occur chiefly among children under the age of five years. Two factors combine to produce this result. In the first place, natural immunity to diphtheria is more rare during

the early years of life. In the second place, diphtheria tends to involve the larynx and windpipe in young children. The percentage of all diphtheria deaths occurring in children under the age of five years in different localities is as follows:—

TABLE XVI.

Locality	Period	Percentage of Deaths from Diphtheria under 5 years
U. S. Reg. Area	1919	56 per cent.
Ontario	1921	42 per cent.
Toronto	1900-1922	54 per cent.
New York State (exclusive of New York City)	1919	55 per cent.
New South Wales	1914	64 per cent.

In view of the above, it is a little difficult to understand the statement of so reliable an authority as Abraham Zingher, who writing in "The Journal of the American Medical Association" states:—"From 80 to 85 per cent. of all cases of diphtheria and of all deaths from the disease occur in children under the age of 5 years."*

The heaviest mortality seems to be between the ages of 12 and 24 months. This is shown by Table XVII. which also illustrates the regular decline in mortality from the third to the fifth years and a rapid decline thereafter. In this table it is interesting to contrast the higher case fatality among London infants from 1894 to 1896 as compared with infants in the United States from 1900 to 1910.

The foregoing shows that the period from six months to five years is the danger period from diphtheria. This is especially true of the period from 12 months to 4 years. During this period a child stands the greatest chance of being susceptible to the disease, of actually contracting the disease, and, having done so, of dying therefrom.

The groups of children to whom toxin-antitoxin has been administered, have been of school age. This was a necessary beginning as a new method may be introduced most easily amongst school children. Much the better way would be to give toxin-antitoxin during the latter half of the first year. At this age many infants are under the supervision of a physician or child hygiene clinic, the

* J. A. M. A., Vol. 80, Page 456.

TABLE XVII.

CASE FATALITY ACCORDING AGE—PERCENTAGE DISTRIBUTION OF DEATHS FROM DIPHTHERIA IN

(A) London Metropolitan Asylums Board Hospitals, 1894-1896.
(B) United States Registration Area, 1910-1914.

Age at Death	Deaths per 100 Cases	
	A	B
Under one year	41.1	7.9
One year	47.7	16.0
Two years	31.6	14.9
Three years	26.5	12.9
Four years	27.9	10.5
Total under 5 years	31.6	62.2
5-9 years	20.4	25.8
10-14 years	12.3	6.0
15-19 years	13.3	1.9
20 years and over	4.5	4.1

Schick test is almost superfluous and the reaction to toxin-antitoxin mild. When a baby is weaned, the mother frequently loses close touch with the doctor and the clinic.

The distribution of diphtheria between the two sexes shows very little of interest. Tables XIII. and XV. show little difference between the sexes either in cases or deaths. Girls over fourteen do show an excess over males. Possibly, girls of this age are more exposed to infection through contact with infants and runabouts among whom most of the cases occur. In the total mortality at all ages there is no important difference between the sexes.

The death rate from diphtheria has been compared by Raymond Pearl with that of the combined death rate from four causes of death upon which no direct attempt at control has been made. The study was made for the Registration Area of the United States from 1900 to 1918, as illustrated in Fig. 12. The rates are plotted on a logarithmic scale, as this method of plotting makes the slope trend of one line directly comparable with that of the other, irrespective of the absolute magnitude of the rates concerned. The four causes of death upon which no direct attempt at control has been made are acute and chronic bronchitis, paralysis without specified cause, purulent infection and septicemia, and softening of the brain. Fig. 12 shows that the death rate from the non-controlled causes has decreased in about the same proportion as that from diphtheria.

At first glance, this diagram might lead to the belief that public health efforts were without value. I do not think this is the lesson of the chart. The lesson seems to be rather that a declining death

TREND OF COMBINED DEATH RATE FOR FOUR NON-CONTROLLED CAUSES OF DEATH AS COMPARED WITH DEATH RATE FOR DIPHTHERIA.
United States Registration Area, 1900-1918.

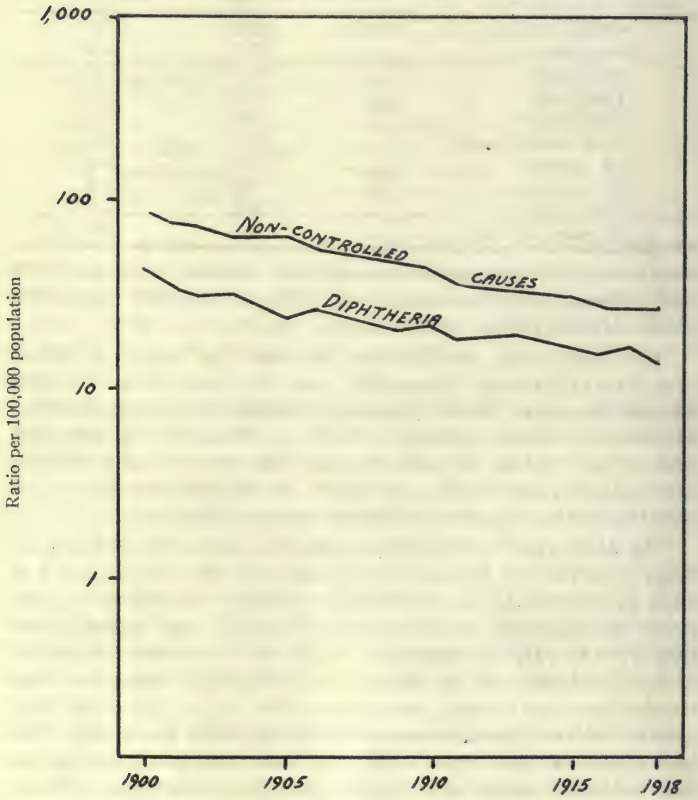

Fig. 12.

rate in any disease or group of diseases should be considered to be the result of many factors. Further, public health effort does result in a reduction in the death rate from these so-called "non-

controlled" diseases. For instance, the control of tuberculosis undoubtedly reduces deaths from bronchitis and anti-venereal work reduces deaths from paralysis and septicemia. The "four uncontrolled causes" are said by Professor Pearl to have been selected at random. If he had taken pains to select the most unsatisfactory statements of cause of death he could not have made a better selection. These terms are undesirable and misleading.

Conclusion.

The history of diphtheria is partly comforting, partly disquieting. The deadly outbreaks of the years before the advent of antitoxin have been replaced by a fatality rate only one-fourth of that which formerly prevailed. On the other hand, the disease is more prevalent than ever, though the death rate is reduced; and during recent years the death rate has tended to rise again. The death rate declined most sharply in the years immediately following the introduction of antitoxin. The decline in case fatality has been greatest during recent years.

The age of greatest danger from diphtheria is from six months to five years. During this period a child has the greatest chance of being susceptible to diphtheria, of actually catching the disease and, having caught it, of dying therefrom. From 42 to 64 per cent. of deaths from diphtheria occur in children under the age of five years. At different ages, the highest death rate and the highest case fatality are found between the ages of 12 and 24 months.

The sexes show only a slight difference. Both morbidity and mortality predominate slightly in boys under the age of 2 years and in girls over the age of 10 years.

Diphtheria is present during the whole year, but most of the cases and most of the deaths occur during the cold months. However, an epidemic, once started, runs its course irrespective of season.

The city dweller is more likely to be immune to diphtheria than the country dweller. The case rate and the death rate is higher in urban than in rural communities.

The Kahn Precipitation Test in a Public Health Laboratory

By H. K. Detweiler, M.D. (*Tor.*)

EXPERIENCE in the Clinical Laboratories of the University of Toronto, Department of Medicine, with the Kahn precipitation test for syphilis[1] led me to believe that this procedure might be of value in connection with the routine Wassermann tests carried out in a public health laboratory. Accordingly, we endeavoured, whenever practicable, to make a Kahn test on every serum submitted for the complement-fixation test for syphilis at the Provincial Board of Health Laboratories, Spadina House.

The main incentive to investigate the possibilities of such a test lies in the inherent difficult and time-consuming technique of the Wassermann test. Most of the efforts to overcome this handicap have been directed along one or two lines; firstly, attempts to modify and simplify the established test; secondly, attempts to utilize the well-known flocculation or precipitation phenomenon which occurs as a collodial reaction in connection with certain sera.

The earliest precipitation test was known as the Fornet ring test, which employed the serum of a frankly paretic patient as the antigen. This was layered in a tube along with the suspected serum and in positive cases a reaction was supposed to occur, not unlike the appearance of a positive nitric acid ring test for albumin in urine.

The next method to be advocated was that Klausner, in which the suspected serum was diluted with distilled water, and allowed to stand at room temperature for from 7 to 15 hours. A flocculent precipitate at the bottom of the tube indicated a positive result. Porges-Meier modified this procedure by adding 1% sodium glycocholate to the mixture, thereby rendering the reaction more delicate.

Following this the Herman-Perutz test was put forward. It consisted, essentially, in adding to the serum to be tested, equal parts of an aqueous solution of sodium glycocholate, and an alcoholic solution of the same chemical to which cholesterin had been added.

In all the foregoing procedures, a vital fault existed in that they

[1]The Kahn Precipitation Test for Syphilis. Detweiler, H. K. Jour. Amer. Med. Assoc., in the press.

fell woefully behind the Wassermann test in point of reliability, and one by one have fallen into disuse.

In reviewing the various precipitation tests, mention should be made of Noguchi's well-known Butyric Acid Test for excess globulin in the cerebro-spinal fluid. This test is quite delicate but lacks the specificity necessary to displace or rival the Wassermann test.

In 1916 McDonagh[2], published what he called his "gel" test for syphilis. It consisted, briefly, in mixing the serum with solutions of acetic anhydride, and glacial acetic acid, shaking, and adding a drop of saturated aqueous ammonium sulphate solution. Crystals form in all tubes but it was claimed that they disappear in all but those containing serum from syphilitic patients. This test proved so difficult of interpretation that it has never come into general use.

The first test which really seemed to promise any considerable degree of accuracy, was that proposed by Meinicke[3] in 1917, and particularly his third modification published in 1919[4]. His method consists in placing 0.2 c.c. of inactivated serum and 0.8 c.c. of diluted antigen in a test-tube, shaking, and incubating at 37 degrees C. over night. The antigen is prepared from horse heart, which is first chopped fine and extracted with ether, followed by extraction with alcohol. The alcoholic extract is used as stock antigen and is diluted with 2.5 per cent. salt solution on the day of the test. Meinicke states that his test disagrees with the Wassermann reaction in only 5-10 per cent. of cases. He also states that the flocculation is coarse and can be seen with the naked eye.

A method which possibly attracted still more attention was brought forward in 1918 by Sachs and Georgi[5]. They use a 6.6 per cent. alcoholic extract of beef heart containing 0.05 per cent. cholesterin as their antigen. This stock preparation is diluted in saline to five times its volume on the day of the test. One cubic centimeter of inactivated serum is mixed with 0.5 c.c. of the diluted antigen, and placed for 18 to 20 hours at 37 degrees C. A fine precipitate forms in the tubes containing syphilitic serum. These authors claimed that their test agreed with the Wassermann results in 94.9 per cent. of 2770 tests. Nathan and Weichbrodt[6] reported 93 per cent. agreements in 1280 tests. A serious criticism of this method seems to be that the precipitate is so fine that great care

[2]McDonagh, J. E. R. Brit. Jour. Dermat. 1916. April-June, 114.
[3]Meinicke, E. Ber. klin. Wchnschr. 54; 613, 1917.
[4]Meinicke, E. Munchen. med. Wchnschr. 33: 932. 1919.
[5]Sachs, H. and Georgi. W. Med. klin. 1918. Bd. XIV, 805.
[6]Nathan and Weichbrodt. Munchenmed. Wchnschr. Bd. 65; 1280.

must be exercised in interpretation and turbid sera are quite unsuitable for the test. Nevertheless, in the hands of experts it has yielded very good results.

With characteristic thoroughness and minuteness of detail, Dreyer[7] proceeded to improve upon the Sachs-Georgi technique. His "sigma" test, published in 1921, employs as antigen an acetone insoluble, alcohol soluble extract of calf's heart containing 0.05 per cent. cholesterin. He describes a complicated apparatus to deliver so many drops at a certain height into tubes of a certain size, and to obtain a quantitative result he employs 9 tubes for each serum. As for results, he claims 94 per cent. agreement with the Wassermann test in 1077 cases. Of these, approximately one-third were syphilitics. The only advantage, therefore, that can be urged for this method is the quantitative result. The great disadvantage is that it is at least as complicated as the Wassermann test, without its reliability.

In February, 1922, Wang[8], described a technique for a precipitation test for syphilis, in which the antigen is a concentrated alcoholic extract of human heart, slowly diluted with saline on the day of the test. The results must be read in 16-20 hours or they are not reliable. The precipitate is fine and granular, making the test difficult to read. Wang claims agreement with the Wassermann test in 96 per cent. of a total of 200 tests, approximately one-third of which were positive in the Wassermann reaction.

Finally, Kahn[9] in 1922 suggested a method of performing the precipitation test which appears to have advantages over all the other methods here reviewed. Keim and Wile[10] report excellent results with this test. The antigen is prepared from fresh beef heart, which is chopped fine, dried by fanning, and ground to a powder. It is then extracted for 24 hours with 10 c.c. of ether for each gram of powder. The ether is poured off and the process repeated three times, when the supernatant ether is quite clear. The ground muscle is then filtered and thoroughly dried.

The powder is next extracted in absolute alcohol (1 gram to 5 c.c.) for nine days in the ice-box and one day at room temperature. It is then filtered and to the filtrate 0.4 per cent. cholesterin is added.* This is the finished stock antigen. On the day of the

[7]Dreyer, G. and Ward, H. K. *Lancet*, 1921, I, 956.
[8]Wang, C. Y. *Lancet*, 1922, I, 274.
[9]Kahn, R. L. Arch. Dermat. & Syph. 1922, 5, 570, ibid 1922. 5, 734.
[10]Keim, H. L. & Wile, U. J. J. A. M. A. 1922, Sept. 9, p. 870.
*Kahn uses the non-cholesterinized filtrate as a second antigen in his tests but we have not found this to be of any material advantage and does not seem worth the extra labour.

test it is diluted with three times its volume of physiologic saline solution.

The actual test is extremely simple. The serum is inactivated at 50 degrees C. in the water bath for 30 minutes as for the Wassermann test. To 0.3 c.c. of serum in a three-eighths inch test tube is added 0.05 c.c. of the diluted antigen. The tube is shaken vigorously for three minutes and placed in the incubator at 37 degrees C. over night (Too narrow a test tube renders shaking difficult.) It should not be agitated before reading the result in the morning.

A strongly positive reaction is evidenced by the presence of one or more large clumps of precipitate which may be floating at the top, or throughout the liquid, or may be lying at the bottom. In the latter case, very slight agitation will at once reveal its presence. We have found it convenient to designate the result as four plus when all the precipitate is gathered into one large clump,—three plus when in several large clumps,—two plus when the precipitate is easily seen as a fairly coarse flocculation, and one plus when in the form of a fine granular suspension visible to the naked eye, but best viewed by the aid of a watchmaker's lens. A negative serum appears quite free of precipitation.

RESULTS.

We have now used this test in parallel with the Wassermann reaction* in over two thousand consecutive sera submitted from the general profession of the Province of Ontario. At the time of writing, the first 2126 of these tests have been subjected to careful analysis with the results here recorded:—

ANALYSIS OF 2126 PARALLEL TESTS.

	Proved cases of syphilis	Not proved cases of syphilis	Non-syphilitics **
Wass. test, positive	480	15	—
Wass. test, negative	25 (treated or early cases)	—	1606
Kahn test, positive	460	6	22 (one plus)
Kahn test, negative	45 (treated or early cases)	—	1593

*The technique of the Wassermann test as performed in our laboratory has been described in the literature on different occasions and need not be detailed here The antigen employed is a cholesterinized alcoholic extract of human heart. The serum amounts are 0.2, 0.1, and 0.05 c.c.

**Including thoroughly treated cases yielding both negative Wassermann

In the 2126 parallel tests there was agreement between the two procedures in 2015 sera or 94.8 per cent. Of the 111 discrepancies, 60 were instances of a positive Wassermann test with a negative Kahn. Of these all but 13 were in proved cases of syphilis, mostly treated. The remaining 51 discrepancies were instances of a positive Kahn test with a negative Wassermann. Of these, 26, almost exactly one-half, were in proved cases of syphilis.

It will be noted that the percentage of agreements in this series (94.8) is remarkably close to the figures given in the series reported by Dreyer and Ward, Wang, Sachs Georgi, Nathan and Weichbrodt, and by Detweiler (1). The actual percentage, however, is of little importance, unless the proportion of syphilitic cases in the series is stated. The reason for this is dealt with elsewhere (1) and need not be repeated at this time.

Out of the 17 instances in 2126 tests, where the Wassermann reaction was very strongly positive and the Kahn test negative:—

6 were treated cases of syphilis,
4 were early primary cases,
7 had no history of syphilis.

Out of 43 instances in 2126 tests where the Wassermann reaction was less strongly positive, and the Kahn test negative:—

34 were treated cases,
1 was an early primary case,
8 had no history of syphilis.

Out of 5 instances in 2126 tests where the Kahn test was four plus or three plus and the Wassermann reaction negative:—

2 were treated cases,
3 had no history of syphilis.

Out of 46 instances in 2126 tests where the Kahn test was two plus, or one plus, with a negative Wassermann reaction:—

21 were treated cases,
2 were early primary cases,
2 had a positive history,
2 had wives with positive bloods,
19 had no history of syphilis.

In nearly all of this last group of cases the reaction was only one plus and could not lead to error if the same precaution in interpretation is taken as in the case of slight complement fixation.

Discussion.

In our previous publication on this subject one felt justified in drawing certain conclusions with regard to the reliability of the Kahn test. This new series of consecutive cases in the regular routine of a public health laboratory serves to confirm the opinions expressed in that article. In the first series the agreements between the two tests amounted to 94.2 per cent. in 1540 tests, of which about one-third were in cases of syphilis. In the work here reported, the agreements, comprise 94.8 per cent. of 2126 tests, of which about one-quarter were in cases of syphilis.

While the Kahn test is remarkably efficient, it cannot yet be said to equal the reliability of the Wassermann test, at least in our hands. It cannot be used to test cerebro-spinal fluids; it misses more cases of treated syphilis than does the Wassermann, and while it has detected the early case before the latter, the converse is more often true.

Most of the 5.2 per cent. disagreements were instances of negative Kahn tests with weak Wassermann fixation, and negative fixation test with a one plus Kahn.

It must be remembered that in the cases marked "no history of syphilis", one is depending upon the accuracy of the history sheets accompanying the specimens. While the great majority of the general profession are conscientious about filling in the data, the specimens without information are labelled for the purposes of this investigation "no history of syphilis". Nevertheless, the Wassermann reaction was positive and the Kahn test negative in 15 cases with "no history of syphilis", whereas the converse was true in 22 cases with the same history.

The ease with which this test is done makes it practicable for use in laboratories and offices in which facilities for performing the Wassermann test are lacking. In a large public health laboratory it has already proved itself of great value in furnishing an additional check upon the results of the Wassermann test and in confirming positive or negative results where the history available may seem conflicting.

I wish to acknowledge my indebtedness to Miss Gladys Matthews for technical assistance which made this study possible.

Canadian National Committee for Mental Hygiene

Mental Hygiene for Normal Children

ACCOUNT OF EXPERIMENT CONDUCTED BY THE CANADIAN NATIONAL COMMITTEE FOR MENTAL HYGIENE AND THE TORONTO KIWANIS CLUB.

Foreword.

Two years ago, through the kindness of our Associate Treasurer, Mr. George H. Ross, and our Auditor, Mr. Fred Page Higgins, the Canadian National Committee for Mental Hygiene was given the opportunity of seeking substantial support from the Toronto Kiwanis Club. The latter body contributed over $5,000.00 and was prepared to furnish further assistance. In the following account are presented some interesting details concerning work that has been conducted by the two organizations.

The National Committee assumed the obligation, for a six months' period, of co-operating in the supervision of 100 fatherless boys. The work included the making of a careful study of each lad—an inquiry into his temperamental make-up, his aptitudes, his weaknesses, his strengths, etc. It was arranged that this information would be incorporated in a report to the Toronto Kiwanis Club, together with recommendations concerning the type of supervision needed. On its part, the Kiwanis Club was prepared to furnish volunteers from among its 250 members who would assume the task of supervising the boys as if they were their own sons.

The six months period has not yet elapsed, but sufficient progress has been made to warrant the statement that the experiment has been an unqualified success. Indeed, the demonstration shows that Mental Hygiene has a wide field of usefulness in its application to normal children. Heretofore, the energies of the National Committee have been devoted, largely, to the solution of the problem of mental abnormality, and rightly so, but, as time goes on, so-called normal individuals should receive more mental hygiene attention.

One of the members of the Toronto Kiwanis Club, Mr. Richard T. Stanley, is writing storiettes about the 87 boys who are, at present, receiving assistance. These accounts are appearing in the weekly bulletin of the Club and are written for the purpose of winning wider support for Child Welfare activities. They are full of human interest, and the following extracts are well worth reading:—

(1)—RAYMOND RIPLEY,

A Citizen of 1930.

Raymond is fourteen—a dog-gone real Canadian boy. Full of pep—and just at the age when he talks and dreams of what he wants to be and do.

His natural bent is wood carving, and he is planning to be a cabinet maker. In school, they just can't keep him out of first or second place.

Raymond and Gordon Thompson (Kiwanian) are Pals—they think the world of each other. Gordon says Raymond is as "keen as a razor," and is backing him against all the other Pals to win several of the Pals' efficiency prizes this Fall. Raymond already has the Kiwanis spirit—he denied himself the pleasure of the last Pals' picnic so he could earn some money to send his sister to a picnic the next day. Wouldn't you like to have a real boy like this to pal with you?

This is just one of the eighty-seven boys who have Kiwanis Pals—all ages from nine to seventeen. Boys in the making of future citizens—influenced and guided by the love and friendship of real Kiwanians.

We are going to tell you some more stories—with photographs, from week to week—of such good Kiwanians as George Batchin, Bill Black, Bob Fitzpatrick, Jim Tweddell, Walter Thompson and sixty others.

(2)—SO TERRANCE TELEPHONED BILL.

When Terrance's mother decided to take out their telephone to cut down expenses, Terrance firmly said "No." He would earn the money and pay for it himself so he could talk to Bill (Kiwanian) any time he wanted to.

Bill is Dr. Will Black, and Terrance is Terrance Wright, his fifteen-year-old Kiwanis Pal. Wouldn't it squeeze your heart a little to have a boy feel that way about you?

Terrance was seeking an outlet for his dreams and ambitions when Bill appeared on the scene. He found Terrance through with his schooling—anxious to help his mother with the home—and on his toes all set to go.

To-day, Terrance is a regular business man—with a bicycle and a newspaper route which Bill staked him to. Out of his earnings, he pays mother the ten dollars a month she was short—a dollar a week to Bill, and the telephone so he can talk to his "Partner."

Terrance is of a mechanical turn of mind and wants to be a draughtsman. Bill and he have talked it over and it is all planned.

Doesn't it read like the romantic start of some of our famous men of to-day?—and why shouldn't it be the start of a famous man of to-

morrow?—guarded and influenced by the loving friendship of a Kiwanian.

This is just another little story of the eighty-seven boys who have Kiwanis Pals—and getting their chance.

(3)—BOB AND THE BUDD BOYS.

Bob Fitzpatrick (Kiwanian) has four of the finest honest-to-goodness boys you ever met, one would think they were sufficient for any man's love and interest—but when Bob saw the three Budd boys, he found his heart big enough to want to be their Kiwanis Pal.

Melville is fourteen, Frank twelve, and Norman ten—all interesting ages. Bob has had a wonderful time this summer with the septette. The Fitz boys and the Buddies have had some real parties together—and Bob takes the gang swimming one night each week. He is frequently asked if they are all his family, or is it a picnic.

Melville and Frank are the huskiest of the trio, but young Norman gives signs of being the real athlete of the Budd family. Melville is a student and is ambitious for a religious career—maybe a famous preacher is getting his start from Kiwanis Palship. Bob sent the Buddies up to Island Camp for ten days—they had the time of their lives—and Bob is the happiest of the lot over it all.

Eighty-seven boys—carefully selected and thoroughly investigated—are receiving the loving care of Kiwanians who are repaid with the joy of real service in guiding these Canadian boys into Canadian citizenship.

(4)—HUGH, DAVID, AND BILL.

BUSINESS OF LIFE—UNLIMITED.

David Alexander became a man overnight—one day a carefree boy of fifteen—the next found him the head of a family of seven.

There was inherent in him some of his soldier-father's bravery and strength of character—and he stood up to his responsibility. Bill, his thirteen-year-old brother and inseparable chum, stood with him. They talked it over calmly in their boyish wisdom—and standing shoulder to shoulder, they looked out into the world and said: "Let's go!"

At this moment of their need of a guiding hand—the unfailing law of adjustment brought a Kiwanis Pal into their lives—and it could not have selected a better man or Kiwanian than Hugh Garrett.

Hugh and David and Bill had several conferences. David is a born executive and has thought out exactly what he wants to be—an executive in a manufacturing organization. He had already grounded himself with two years at the School of Commerce—his brother Bill is of the same mind and right on David's heels.

The boys wouldn't take any kind of a job, as they wanted to get started right—so, armed with a letter of introduction from Hugh, David stormed the office of one of Toronto's prominent citizens. He waited all one afternoon and most of the next morning to see him—once he got in, he sold himself—landed a position, and is making good.

Hugh has taken Bill into his own office—he is so courteous and useful that Hugh hates to have him leave to go back to school. The firm of Alexander Bros.—capital limited—advisory board, Mr. and Mrs. Hugh Garrett—are well on their way in the business of life—Kiwanis has once again justified its existence—and you should hear Hugh and Mrs. Hugh tell of the joy they have gotten out of it.

Twenty years from now there will still be Kiwanis Clubs—because the spirit of Kiwanis is eternal. Two business executives will be Kiwanians in that day—and you are darn right that the Clubs David and Bill Alexander belong to will have Kiwanis Pals to reach out a loving hand to other Davids and Bills standing on the threshold of life.

The Provincial Board of Health of Ontario

Communicable Diseases Reported for the Province for the Month of September, 1923

COMPARATIVE TABLE.

Diseases	1923		1922	
	Cases	Deaths	Cases	Deaths
Smallpox	25	0	19	1
Scarlet Fever	270	6	180	4
Diphtheria	245	17	180	19
Measles	95	0	62	0
Whooping Cough	230	8	196	8
Typhoid	131	25	79	7
Tuberculosis	169	74	180	111
Infantile Paralysis	6	2	55	9
Cerebro Spinal Meningitis	2	1	8	6
Influenza	13	7	....	....
Influenzal Pneumonia	....	2	....	4
Pneumonia	....	93	....	76
Syphilis	173	....	138	....
Gonorrhoea	222	....	210	....
Chancroid	6	....	3	....

The Facts About Niels Bukh

And About His Visit to America in September and October With His Olympic Games Team of 25 Athletes.

Niels Bukh is the founder and head of the great Peoples' College at Ollerup, Denmark, on the beautiful island of Fyen, near Copenhagen.

He discovered and developed a revolutionary system of physical education in 1913, which has changed the entire course of European methods in this field. He has built up the great school at Ollerup which is attended by students from all parts of the world who are sent by their countries to learn his method. He has to date trained 1,000 young men and women and sent them out to carry on this work.

Bukh calls his method "Primitive and Rhythmic Gymnastics." The first division is the one which has been most revolutionary. He believes that many of the muscles and functions of primitive man have become atrophied because of our modern manner of life, and that the prevailing weaknesses of the race can be traced to their neglect. His Primitive Gymnastics are designed to call into use again all of these neglected elements of the body. They are performed by his students with a minimum of clothing and have created a furore wherever seen because of their strange character. These exercises are ugly, and call for unparalleled contortions and strenuousness. They go back to man's natural movements of hundreds of thousands of years ago. Results are quick and permanent. Says the Politiken of Copenhagen: "He is able to transform the stooping crook-backed recruit to a statuesque, beautiful youth in so short a time that one is tempted to believe in miracles."

Having thus produced a supple, co-ordinated body, his next division, Rhythmic Gymnastics, takes up and completes the physical development which has caused Europe to marvel, and all in the short period of three months, which is the usual term at his adult college. These latter exercises are very beautiful and the students enter into them with an eagerness and a joy which demonstrates Bukh's second great achievement. He has rediscovered the secret of the Greeks; how to create spontaneity and the play spirit, which has been totally lacking from the modern systems of physical education.

The importance of this discovery lay in the fact that in 1913 Europe had lost its faith in the prevailing physical education. The systems of Ling of Sweden and of the Germans were formal, spiritless and uninspiring. There was a feeling that gymnastics were not so fundamental and

healthful as had been believed, and that they were only of value in corrective work. It was seen that this type of development had been largely superimposed by those interested in strengthening the national armies. It was charged that the known methods were surface activities, that they did not go deep into the mind and spirit, nor link up with self expression of fundamental instincts.

It is all these things that Bukh has changed. He planned his work so that it would spring out of the delight of young people in discovering a rhythmic method by which they could express their love of beauty which is so dear to the life of youth. He has made physical education a delightful game of self expression.

Bukh comes to the United States just at a time when all those interested in recreation, physical education, athletics, and kindred subjects are centering their efforts on universal participation, as contrasted to the growing national custom of sitting and watching picked teams perform, the disease which has been dubbed "spectatoritis." His methods and his system will be of the greatest value in backing up this movement for a healthier nation. Familiarity with his plan will also bring to the physical educators of America the same stimulus and new vision which revolutionized the European efforts in this field.

Bukh and his pupils arrived in the United States about the middle of September and are touring the country as far West as Omaha.

Bukh has headed every team of athletes which has represented Denmark since 1912. His teams have been the sensations of Olympic Games. He has been invited to demonstrate his work in every great country in Europe. He has trained the officers of the Danish Army. The Belgian Army has sent a commission to study his methods, and a Royal Commission from the Netherlands did the same. The chief educators of Germany brought him to their conference in Hamburg. He has been asked by the leading educators of England to conduct a course for physical educators there. From one end of Europe to the other, he is the one outstanding figure in the physical education field.

A committee of representatives of the Playground and Recreation Association of America, Community Service, the Russell Sage Foundation, the American Scandinavian Foundation, the Country Life Association of America, and Teachers' College of Columbia University have been responsible for bringing Bukh and his athletes to America. Their purpose is not commercial, but educational.

Book Review

"The Mortality Experience of Industrial Policyholders" (1916-1920).

This useful volume is the result of a suggestion made by Dr. Frederick L. Hoffman, formerly Third Vice-President and Statistician for the Prudential Insurance Company of America. It consists of a combined study of industrial mortality statistics. The primary classification guide used has been the Manual of the International List of Causes of Death (1909 revision), the rules of the United States Bureau of the Census for the treatment of jointly returned causes of death, supplemented by the Index of Joint Causes of Death issued by that office. The report has involved an enormous amount of work and co-operation upon the part of a number of life insurance companies. It should prove a valuable contribution to the statistical information which we possess as to causes of death and in addition to being of value to life insurance companies, it might well be utilized by public health authorities for definite information upon which to base preventive action.

Notes on Current Literature

From the Health Information Service, Canadian Red Cross Society.

Health Habits.

The instruction of school children in health habits and ideals. An address by Miss S. L. Jean, of the American Child Health Association before the National Conference of Social Work, Washington, D.C. "Mother and Child," July, 1923, page 291.

Maternal and Child Hyygiene.

New York State's plan for maternity, infancy and child hygiene, as outlined by Florence McKay, M.D., Director, Bureau of Child Hygiene, New York State Department of Health. "Public Health," Michigan, July, 1923, page 267.

Child Hygiene in New York City.

The Bulletin of the New York City Department of Health for June, 1923, reviews the work of the Bureau of Child Hygiene during 1922.

School Medical Inspection.

The technique and results of school medical inspection. "Mother and Child," July, 1923, page 315.

Health for School Children.

A report of the Advisory Committee on Health Education of the National Child Health Council.

Health of School Children.

An address by the Director of Public Health, University of Michigan, before the American Medical Association, on constructive health activities in the public schools. "The Journal of the American Medical Association," August 4th, page 378.

Mouth Hygiene for School Children.

By Alfred C. Fones, D.D.S., Director, Division of Dental Hygiene, Board of Education, Bridgeport, Conn. "Mother and Child," August, 1923, page 339.

Social Hygiene.

The American Social Hygiene Association has recently issued two pamphlets on community education in social hygiene. One pamphlet deals with principles and the other with methods of organization.

Malnutrition.

A paper read by Beatrice Woodward, R.N., before the Nurses' Annual Convention at Santa Barbara, 1923, on the causes, effects, and some of the remedies of malnutrition. "The Pacific Coast Journal of Nursing," August, 1923, page 488.

Expenditures of Health Departments.

Section II. from the forthcoming report of the Committee on Municipal Health Department Practice, of the American Public Health Association. "American Journal of Public Health," June, 1923.

The Work of the Ministry of Health.

A review of the work of the Ministry, by Mr. Melville Chamberlain, British Minister of Health. "The Medical Officer," July 7th, 1923, p. 5.

Canadian Red Cross Society Report.

Annual Report of the Executive Committee and Review of Activities of Provincial Divisions for the year 1922.

American Red Cross Pamphlets.

The American Red Cross have recently issued revisions of the following pamphlets, copies of which may be obtained upon application to the Canadian Red Cross Society:—

"Information for Nurses Concerning the Red Cross Public Health Nursing Service."

"Nursing Equipment for American Red Cross Public Health Nurses."

"First Aid Instruction."

Red Cross Manual for Home Nursing Classes.

A Manual for Home Nursing Classes has recently been issued by the Canadian Red Cross Society. Copies may be obtained from the Executive Officers of Provincial Divisions. Price 25 cents.

News Notes

On October 9th, Mrs. Pankhurst, Mrs. R. A. Kennedy of Ottawa, and Miss Estelle Hewson, Ontario Secretary for the Canadian Social Hygiene Council, start on a propaganda tour through Eastern Ontario. Local Medical Officers of Health, Women's Institutes and Medical Societies have been asked to co-operate, and it is anticipated that this tour will be quite as successful as the one recently undertaken by the same speakers in Northern Ontario.

The Recreation Congress meets this year in Springfield, Illinois, the sessions being held in the State Capitol. Important among the topics to be discussed are athletics for girls and women, the national physical fitness campaign, adult recreation, the Church and recreation, home play, small town and open country recreation, recreation for coloured people and summer camps. Other interesting topics of discussion are the automobile's place in recreation and the value of parks and playgrounds in real estate development.

Dr. C. J. O. Hastings, Medical Officer of Health of Toronto, was recently awarded the Degree of Doctor of Science at a special convocation of the University of Syracuse.

The Hon. Dr. Forbes Godfrey, Minister of Health and Labour, Ontario, spoke on the subject of "Accidents in Industry" at the recent Convention of the Safety Congress, held in Buffalo.

Dr. R. R. McClenahan, of the Provincial Board of Health, Ontario, who has been confined to hospital for the past two weeks, is making satisfactory progress towards recovery.

Dr. J. W. S. McCullough, Chief Officer of Health, Ontario, read a paper entitled "Whole Time Health Officers" at this year's Annual Meeting of the American Public Health Association in Boston.

Editorial

THE NEW ORDER.

People are no longer satisfied with the microbe and other theories that were generally accepted a generation ago. So at least says a bulletin issued by the Citizens' Medical Reference Bureau (whatever that organization is), recently broadcasted to such an extent that various metropolitan dailies reprinted it. This useful piece of information is followed by more of an equally enlightening character which, being interpreted, leads one to believe that to administer anti-toxin is wicked, to vaccinate is to follow the practice of those who are utterly vile, while to suggest the efficacy of quarantine is to put oneself completely behind the pale. The raison d'etre of this effusion appears to be a book on Tuberculosis, by Dr. David C. Muthu, a well-known English physician, which may have some merit.

Dr. Muthu discusses the conveyance of disease and points out that the prevalence and spread of epidemics are largely influenced by filth, insanitation and uncleanliness, that they rage in poor overcrowded and ill-ventilated districts and slums devoid of fresh air and sunshine, and that when such insanitary areas are cleared, the epidemics lose their virulence and disappear. All of which is quite true and has nothing whatever to do with the mild suggestions of the Medical Reference Bureau.

Dr. Muthu goes on to say that "the medical mind has been trained for a generation to think and act bacteriologically. The luxurious development of bacteriology has side-tracked medical research, narrowed its vision, exaggerated the part played by micro-organisms and distorted the perspective of healthy and diseased conditions."

This statement may also be quite true, but capable, however, of widely different interpretation by scientific and lay minds. A little knowledge is a dangerous thing and the anti-medical fanatic can easily take a statement of this character and twist it quickly into a fantastic resemblance of its former self. That is doubtless the reason the Medical Research Bureau printed it.

The proverbial grain of truth is present in Dr. Muthu's statement, however, and it is worth pondering over. Every far-seeing person interested in public health must wonder whether, in spite of the infinite value bacteriology has rendered us in giving us some vision of public health possibilities, we have not limited ourselves to what we shall find to be primitive conceptions. In the public health of the future, the

psychologist, the economist, and the recreation expert will doubtless play a part quite equal to that of the bacteriologist, the physician and the sanitary engineer. Perhaps the time is not yet ripe, but knowledge breeds wisdom, and from wisdom comes the understanding that finally will avail us much.

Even through the mist rising from the wailings of the anti-vaccinationist and his ilk, one sees a vista of things greater than have been.

ON AGREEING TO DIFFER.

It is reported that a protest against mixed dancing in school premises was forwarded by the Baptist Convention of Ontario and Quebec recently in session to the Management Committee of the Toronto Board of Education. The protest was filled and no action on the part of the Board resulted.

One cannot but wonder at the ridiculous situation which presents itself when a protest of this sort is forwarded by some well-meaning denomination. While one sect is greatly exercised by the terrific immoralities which result from the admiration and practice of the terpsichorean art among young people, another rolls up its sleeves, waxes the parish hall floor, organizes a first-class orchestra and invites all and sundry of the neighbourhood to trip the light fantastic.

Sect number one sees the devil hiding behind the piano. Sect number two by the same token sees him ignominiously fleeing out of the door, pursued by the strains of the Blue Danube.

It all depends upon how you look at it. If your father and your father's father lived on Chestnut Street and went to the Chapel, well, then, perforce you petition the School Board to stop this disgraceful and immoral and degrading dancing immediately. If, however, your immediate ancestors for a few generations back lived on Walnut Street and went to the church, you shout: "On with the dance, let joy be unconfined!"

Which is right? Ah! that is another question, which neither of us has had time to investigate. Some day we'll get together on the matter. Then we'll see that our young people get a fair show. In the meantime we'll just agree to differ.

All of which sounds almost like an argument for church union.

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The Significance of the Jewish Dietary and Hygienic Laws

By David H. Fauman, M.B. (Toronto), L.M. (Dublin)

THE purpose of this short article is neither a statistical study nor a polemic for the Jew. These numerous, rigid, minute and detailed regulations are but little known. Yet these laws are of great antiquity and have been closely followed for over a score of centuries. They show a knowledge of pathological anatomy that is almost uncanny. It is an established fact that Jewish mortality statistics are lower than those of their neighbors. The Jew appears to have a greater immunity to certain diseases. An attempt will be made to briefly describe these laws and to note any relationship that may exist between them and general Jewish health conditions.

These various laws are not merely traditional customs, but an integral part of the religious code, closely followed by the orthodox Jew. The most important and numerous are the dietary laws, which consist of two great divisions.

(*a*) What food is "Kosher"—i.e., clean, pure and may be eaten.

(*b*) Regulations as to the method of meat slaughter and examination of the carcass for defects.

A.—Kosher foods.

1. Any quadruped that is herbivorous, ruminant and cloven-footed whether tame or wild. Ex.—Ox, sheep, goat.
2. Certain fowl, i.e., pigeon, hen, goose, duck, etc.
3. Fish that have both scales and fins.

The outstanding examples of "Trefah" (unclean) foods are the swine, rabbit, oyster, clam and lobster.

4. "Ye shall not eat anything that dieth of itself" (Deut. 14:21).
5. "Moreover, ye shall eat no manner of blood" (Leviticus 7:26).

Therefore, the housewife keeps all meats salted for an hour and then washes it thoroughly in running water before cooking, to get rid of any blood remains.

6. The fat covering the kidneys, abdominal organs and flanks, certain blood vessels, sinews and membranes are not to be eaten. The established rule is to have all such portions removed from the meat by the butcher before it is offered for sale.
7. "Thou shalt not seethe a kid in its mother's milk" (Exodus 23:19.)

Therefore, no milk product is served at meat meals. There are two sets of china in orthodox Jewish homes. One for meat and the other for milk foods. The two are never mingled, nor washed together, nor dried by the same towel.

These, in brief, are the clean food regulations. It is interesting to note that the TENEIA SOLIUM (tapeworm) and the TRICHINELLA SPIRALIS are both found in the pig. (Osler.) Also that oysters and mussels have been proven to be definite typhoid carriers.

The orthodox Jew believes that the details concerning meat slaughter were given to Moses on Mount Sinai and are of Divine origin. This method has received the approval of the most distinguished physiologists and veterinary pathologists from the viewpoint of both hygienic and humanitarian principles.

The instrument or knife must be of a minimum length twice the width of the neck of the animal or fowl to be slaughtered. It must be exceedingly sharp, without the least trace of a notch or rust. The trachea, gullet, both carotids and jugulars must be severed in one continuous motion. This produces instant unconsciousness, for the brain's blood supply is at once depleted. There must be no delay, undue pressure or irregular tearing during the act. There are five principles involved in this act, and if any one is violated, the animal is not "Kosher".

The carcass is next subjected to a minute examination. Primarily there must be no loss of limb, dislocation of the thoracic arteries, internal injuries or congenital deficiency or duplication of a limb or organ. The official who kills and examines the animal is called a "SHOCHET". He is specially trained and must have a good anatomical knowledge, particularly of the pulmonary and abdominal organs. He is examined by a Rabbi, who grants him a diploma, and regularly supervises him.

The inspection consists of four grand divisions.

A—External. An animal is not "kosher" if it shows any gangrenous skin, injury, lack or duplication of hind leg; disease, fracture or dislocation of a thigh; tuberculosis in, or total absence of the upper jaw and nasal cavities.

B—Cranium and cerebro-spinal system. An animal is not "kosher" if it shows decay in any part of the cranium even without perforation of the dura mater; mutilation or fracture of the major part of cranium;

perforation of the arachnoidea; liquidization of brain; severance or mutilation of spinal cord.

C—Thoracic region. An animal is not "kosher" if it shows any perforation of gullet, trachea, bronchus (large) or pleura; block in any part of the lung; foul or discolored fluid or pus; change in color of lungs to ink-black, yellow, dark-grey or brown; adhesions between lobes or to heart, diaphragm or pleura; compression, inflation, or solidity of the lungs; cavities in lungs.

D—Abdominal cavity. An animal is not "kosher" if it shows signs of perforation or mutilation of the larger vessels or any viscus; presence of pus or foul fluid; marked discoloration of viscera; absence or duplication of viscera.

These regulations here are very briefly sketched. They are described in minute detail and the signs described are those that will be found in foot-and-mouth disease, cysticerci, parasites, tumors, T.B., actinomycosis, echinococci, chronic inflammation, etc.

The general hygienic laws are not as numerous, but show a wonderful grasp of personal and civic hygiene. They were centuries in advance of their time and most of them are true to-day. Only a few will be mentioned.

The leper and various other infected persons were segregated without the City and their clothes destroyed. A woman is unclean for seven days after menstruation and for at least forty days after labour. All those who have undergone a period of uncleanliness for any reason, before they may resume social or family contacts and privileges must be thoroughly bathed in flowing water. Any person coming in contact with a corpse is unclean and must be purified. A minutely described form of hand-washing in flowing water, before eating, is followed. Drinking-water must not be left uncovered. Minute regulations insist on the necessity and frequency of bathing. The neglect of one's health is considered a serious sin. Excreta must be buried outside the town. The cemeteries, tanneries, etc., must be outside the city limits. Mingling in crowds during epidemics is prohibited. Sex relations are carefully described. These are but a few of the very numerous regulations. They give an idea of the importance in which hygienic laws were held by the Hebrews.

Now a word as to Jewish morbidity statistics. A survey of the evidence shows that the Jewish mortality rates throughout the World are definitely lower than those of their neighbors. Only two examples will be given here.

	Jewish	General
Mortality in U.S. of children under fifteen years.....	28.67	56.4
General mortality rate in U.S.....	14.85	26.6

These figures are per thousand of population.

Chicago shows an interesting example of two adjoining river wards in both of which sanitary conditions were equally bad. In one ward the population was predominatingly Jewish with a death-rate of 11.9—the adjoining ward had very few Jews and a death-rate of 16.6 per thousand.

The causes of this lower mortality are various and not due to differences of an anatomical or physiological nature. The Jews are more nervous, have a larger portion of insane, from social causes, ghetto restrictions, etc., and not because their nervous system is in any way anatomically different. In the ghetto, where the Jews were more or less segregated from their Christian neighbors and could pursue their mode of life according to their ritual and traditions, they had a low morbidity rate. There were no alcoholic excesses, little venereal disease, marked family devotion, complete rest on the Sabbath, and the full benefit of the observance of these dietary and hygienic laws. The most significant fact is that where the Jews commingle and assimilate freely, adopting their neighbors' customs and habits all too readily and haphazardly, their death-rate increases. Vital statistics show the death-rate of American-born Jews at 9.16 per thousand and of foreign-born Jews at 7.61. Venereal diseases and alcoholism are seen in greater numbers among the native Jew as compared with his recently imported brother.

The conclusions to be drawn are quite obvious. Primarily no country is a sinless Paradise, secondly the Jew is not an Angel, and finally civic and religious privileges must be paid for. Emerson's theory of compensation is still true if not always obvious.

A casual perusal of these various laws will show a marvellous knowledge of pathology and hygiene. Where did Moses and those well-nigh legendary Rabbis who followed him, obtain their knowledge? Why did no other nation of that period or for centuries later possess even a rudiment of that knowledge? Who can say? The orthodox Jew states quite simply that they are of Divine origin. After all, the origin of that knowledge is not important to-day.

There is a point of view in regard to the strict observance of this code and its effect on the Jew, which the author has not hitherto seen mentioned. The Jew lived for centuries under conditions so difficult that it is hard to imagine them. Let us momentarily forget all religious, racial and political persecution with the inevitable train of abuse, massacres, violated women, etc. Let us consider the physical aspects of Jewish life. For centuries the Jew lived shut in a ghetto, in overcrowded, unsanitary hovels situated in the city's darkest, narrowest, foulest alleys. He was not allowed on the farms. He was a city product engaged in petty training and sedentary occupations which required long hours of labor under wretched conditions, poor light and foul air. Much of his spare time was spent in dim little synagogues in Talmudic study. The poverty was grind-

ing, the general tone of life at a high nervous pitch, always in constant fear of fresh restrictions or abuses. For every petty official the Jew raised his hat and stepped from the sidewalk. Orders for summary evacuation could always be expected.

And yet, not only has the Jew survived, but somehow actually thrived. Is it because he is the "Chosen People"? A theological discussion, here, will not clarify the problem. Certainly the regulations described above would tend to improve health conditions. That point cannot be over-emphasized.

Most important is the fact that the rigid observance of these numerous laws—and only a few have been mentioned here—was at all times rather irksome and difficult. They isolated the Jew from his neighbors. They could not eat at the same table. Differences were always intensified. Intimacies difficult. Intermarriage impossible. To be a pious Jew entailed persistent sacrifices and constant difficulties. There was no middle course. Judaism could not be sacrificed for material success, pomp or privileges. One was a Jew first, and successful or not—as the case might be—afterwards.

It was hard to be a good Jew. Yet, in the author's opinion, it was that very difficulty that enabled survival. The Jew always keenly realized these difficulties, and rather gloried in them. The various regulations were not perfunctorily observed, but minutely studied and enlarged and enthusiastically followed. It was difficult, but it tended decidedly towards keenness of vision, strength of character, mental exercise, will control, and the ability to choose one's path and persist in it at no small cost in physical, mental and financial welfare. All too often life itself was the price paid for that insistence. The race developed "the will to live". The New England Puritans were somewhat like that.

There was of course little assimilation. This tended to develop a pure stock with certain definite physical, mental and moral traits. But there is nothing in the multitude of Jewish law that would detract from decent citizenship. The Talmud frequently repeats the injunction: "The law of the land shall be thy law".

To-day we face the difficult problem of immigration. The words "assimilate", "melting-pot", etc., are on the tongue of every glib politician, half-baked social worker, and ranting, reactionary journalist. What shall we assimilate, and what shall we melt? To assimilate means primarily to break down the inherent characteristics of a substance to produce something entirely different.

The author believes that the pure-bred is superior to the hybrid; that every racial or national group has certain peculiar, definite traits and qualities developed through the centuries for a variety of reasons, that are unique and distinctive; that in the building of a great commonwealth

these distinct racial traits should be encouraged in order to develop a state that will benefit all the more from the many sidedness of human thought and effort. Only the goal must be the same: the happiness and glory of the state. Let each one give according to his inherent gifts.

Consider the diamond. It consists of a multitude of tiny facets, some small, some large, irregular or even, of all shapes. Each facet catches only a tiny ray of light—of different colors—itself of little importance, the sum total a thing of gorgeous rainbow light and beauty.

There are also the British Isles to be remembered. There is the stolid Briton, the stoical, prudent, zealotic Scot, the fiery Irishman, the poetical, mystic, visionary Welshman; different groups, different blends, and each insisting fervently on the right to maintain and perpetuate these differences; and yet all working as a united whole and eminently successful. Why should we, here, attempt to produce a jelly-like uniformity with its concomitant mediocrity?

The Jew, here as elsewhere, is gladly embracing the privileges and opportunities of liberty and tolerance. Often though, he is not choosing wisely, and paying too dearly. Frequently he discards assets that have long been of value and adopts habits which must harm him. For, alas, he is in many cases too strenuously trying to assimilate. He no longer wishes to be known for his differences. In peoples, as in flivvers, there can be the dread monotony of mediocre uniformity. The benefit is doubtful. Distinctiveness is superior to uniformity.

Would Canada have good Jewish citizens? The author humbly asserts from first-hand knowledge, that it is essential they be good Jews first.

Infantile Mortality

By Dr. E. N. A. Savard,
Inspector General, Provinicial Bureau of Health, Montreal, Que.

THE Government of the Province of Quebec has recently instituted a campaign against Tuberculosis and Infantile Mortality, and has voted an appropriation of $500,000.00 to be used exclusively for the above purpose, during a period of five years, $100,000.00 being consecrated each year to this work.

Programme of Campaign.

1. *Popular Education*—
   - (a) Lectures illustrated by the cinema or slides, to be given by the sixteen district inspectors in all the municipalities of the Province;
   - (b) Literature, pamphlets, tracts, newspaper articles;
   - (c) The teaching of hygiene in all the schools. Our inspectors have already prepared for this purpose papers for the use of teachers.
2. *Consultation Centres*—
   - (a) Anti-tuberculosis clinics (the keystone of the anti-tuberculosis campaign, says Dr. Leon Bernard, Professor of Hygiene at the University of Paris). These clinics will be under the direction of competent physicians, assisted by trained nurses, but following a preparation course of some months in the clinics and hospitals already established in Quebec and Montreal.
   - (b) Infant Clinics or Gouttee de Lait as numerous as possible.
3. *Auxiliary Works*—
   - (a) Maternal Assistance.
   - (b) Grancher Institutions.
   - (c) Holiday settlements.
   - (d) Open air schools.
   - (e) Farm settlements.

Treatment.

Isolation hospitals and sanatoria. The Government has already entered into an agreement with a number of institutions, such as

the Laval Hospital at Quebec, Lake Edward Sanatorium, St. Agathe Sanatorium, and has granted a large sum of money towards the construction of a hospital in Montreal.

Some clinics are now open, others will be opened shortly in other centres of the Province, but the foe must be fought on its own ground. For this reason an investigation should be made to find out in what part of the Province it exercises its greatest havoc. As Tuberculosis is rarely if ever declared, it is impossible for us to ascertain merely by the reports of deaths where it is most prevalent. Our district inspectors consequently will be called upon, with the help of physicians, to make a census of all the tuberculous patients, and clinics should be opened in every place where they are much needed.

Infantile Mortality is the outcome of four principal causes:

1. Pre-natal causes.
2. Post-natal causes.
3. The dangers of the pre-school and school period.
4. Contagious diseases.

Pre-natal Causes.

Premature birth and general debility bring about a high rate of Infantile Mortality.

These causes are consequent upon the weakening of the health of the parents especially through Tuberculosis, Alcoholism, Syphilis, overwork in mothers and future mothers in workshops and factories.

Strenuous efforts are now being made to combat Syphilis and Tuberculosis. A number of years ago, an educational campaign was undertaken against Alcoholism which should be carried on unrelentlessly. Societies or private organizations who are interested in social work should give special attention to the welfare of mothers and pregnant women. The latter when forced to earn their living in workshops or factories should be exempted from work at least during the four last months of pregnancy. Clinics for expectant mothers should be more and more numerous. These women thus bound by the double obligation of maternity and daily work are worthy of all our care and should be held sacred to us because of their help in shaping the future of both race and country, and also because theirs is the true ideal of feminine dignity under the triple crown of Love, Maternity and Work.

Post-natal Causes.

(a) Gastro-enteritis;

(b) Diseases of the respiratory organs and especially tuberculosis.

(a) Gastro-Enteritis is the heaviest burden on the record book of Infantile Mortality in the Province of Quebec. Its principal cause is ignorance in regard to feeding babies. It is more often than ever the consequence of erroneous feeding as it is exceptionally found in babies fed by their mothers, especially when such feeding is rationally practiced.

This disease is much more prevalent in babies fed with the bottle, and is the rule in babies fed with other things than milk, or when milk is given in too large quantities, or when it is of bad quality.

It could therefore be prevented by giving the infant a food perfectly adapted to its digestive organs, according to certain requirements concerning quantity and quality. This food is Mother's Milk.

Necessity of Maternal Feeding.

Mothers secrete a milk specially adapted to the infant's needs during all the time it has to be fed by them.

That a child benefits by such food is demonstrated by the fact that out of 100 babies who die under one year of age, 90 have been deprived of their natural feeding; in other words, a child not fed by its mother is 9 times more exposed to death than the child thus nourished. It follows that the most imperious and sacred duty of a mother is to feed her baby herself.

A Few Errors.

This rule of maternal feeding is unfortunately ignored at the present time, and the forsaking of their duty by mothers can be termed a real social wrong. Unfortunately this deplorable example is not always given by the unhappy and the poor, but by those whose education and social position should protect them against such an error.

Lacordaire, the famous Dominican preacher, once truly said: "She who has never fed her baby is only half a mother."

Maternal feeding is not only beneficial to the child, but also to the mother. Many nervous, anaemic women who incessantly complain of headaches, pains in the stomach, neuralgia, are freed from these ailments through feeding their babies. Their appetite

becomes regular, their digestion is facilitated, and their complexion becomes fresher.[1]

On the other hand, a child fed by his mother is more easily brought up; his growth is more regular and more considerable, his health is better, his complexion is rosier, his limbs are firmer, his teeth come out normally, and rickets are a thing unknown to him; intestinal troubles may be his lot, but are always slight and of little consequence. He sleeps better, plays more joyfully, and is better able to resist disease.

Numerous are the mothers who would like to perform their duty, but who do not think they can. In all good faith, they bring forward such and such an impediment of indifferent health, of feebleness, of anaemia, of an insufficient development of the breast. They believe that feeding with the bottle will be of more benefit to their child than a scarcity of unnourishing milk.

Neighbours, and sometimes their physicians, help them in such delusions and advise them not to feed their babies.

To these victims of ignorance and prejudice it should be affirmed that it is possible in most cases for them to acquit themselves of their duty towards their child. It can be said without fear of error that 90 per cent. of the mothers are able to feed their children.

Mixed Feeding.

Whenever it is found that for a reason a mother has not enough milk or that her milk is too poor, she should nevertheless continue her feeding, but these defects should be corrected by also giving the child pasteurized cow's milk. This is what is called Mixed Feeding, and it can be given in two ways: either by replacing a few meals at the breast, by some with a bottle, or by making a shorter meal at the breast and completing it with a certain quantity of cow's milk. This quantity should be determined according to the age of the child, but during the five first months, the mother's milk should always constitute more than half of each meal.

Mixed feeding has the following advantage over purely artificial feedings:

1st—Mother's milk may be fed partially;

2nd—Mother's milk helps the child's stomach to better digest cow's milk.

[1]Feeding in mothers has sometimes been said to deform the figure. "Georgian and Circasian mothers, who are reputed to be the most beautiful women on earth, always feed their children."

3rd—The child's stomach is already accustomed to cow's milk when it is fed to him exclusively after the fifth month.

Artificial or Bottle Feeding.

When it becomes impossible for a child to feed on its mother's milk either at birth or later, recourse must be had to the milk of an animal. This is what is called Artificial Feeding.

Such feeding should only be resorted to when it is proven that the proper one is utterly impossible; it is the most frequent cause of gastro-enteritis, and consequently of Infantile Mortality.

Through the pasteurization of milk, popular education and Baby Welfare Clinics, considerable progress has however been made towards decreasing the evil.

Cow's milk is habitually used on account of the facilities in getting it and of its abundance. Like mother's milk, it contains all the substances necessary to nutrition, and growth. It is a complete food. It differs chiefly from mother's milk in that it contains more casein, less sugar and a higher quantity of mineral salts. Cow's milk is unfortunately not constantly identical in composition; it may be modified by different factors, first falsifications such as skimming, watering and chemical alterations, such as the addition of antiseptics to prolong its preservation.

Cow's milk contains numerous germs or microbes. Some come from the cow itself when the animal suffers from a contagious disease such as tuberculosis, etc.; others come from external causes. For instance, they may be deposited in milk from the air, but more often they are due to a lack in cleanliness; they may come from the udder soiled with manure, or from the hands of milkers or from dirty pails and other utensils, or from polluted water.

All these germs find in milk a most favorable multiplication ground especially during summer time. Through their cultivation in milk, the greater number of these microbes form toxins which are real poisons. These toxins may determine in the child severe accidents such as green stools, vomiting, in a word gastro-enteritis or cholera infantum. Before being consumed, cow's milk should always be sterilized to kill all microbes.

Pasteurization.

Pasteurization as practiced is not always efficient unless it be carefully made under supervision and as soon as possible after milking at a temperature of from 143° to 145° F. and during thirty minutes.

Pasteurization at Home.

At home, pasteurization is done either by heat or by boiling during three minutes, or by heating in a water bath at 100 degrees. By this last process, called the Soxhlet process, the milk is poured in small bottles, each containing the necessary quantity for one meal. These bottles are stoppered with sterilized absorbent cotton and are placed in a pan containing water that is boiled during forty minutes, then the bottles are placed to cool and are kept thus in a cool place.

Before being fed to the child, a bottle is placed in hot water to warm the milk, then the cotton stopper is replaced by a nipple.

This sterilization is not complete because it may be so only at 100 degrees but it is however sufficient when the entire milk thus treated is to be consumed inside of twenty-four hours.

Vitamines.

Vitamines are substances similar to ferments. Their exact nature is still unknown but their presence in foods and especially in milk is an indispensable factor in nutrition. Their absence causes troubles of nutrition, such as scurvy, ricketts, Barlow's Disease, etc.

From the researches of Albert Carrigues, I have summed as follows the question of vitamines:

Vitamines are numerous but until the present time, chemical science has determined only three groups:

1st Group.—Vitamines B., soluble in water and alcohol: easily destroyed by alcalins especially when warm. Thus they are destroyed in canned green vegetables to which has been added carbonate of sodium. They are sensitive to heat. But it has been found necessary to heat up to 120° centigrade to obtain a total absence of their effects by sterilizing various cereals subject to the test. A great difference has however been found to exist between various types of vitamines, for instance the vitamines of the carrot would bear as much as 100° centigrade during half an hour and 115° during three-quarters of an hour without being modified. Whilst those of the bean would loose as much as 40° when heated up to 120° centigrade.

Vitamines B are to be found in many animal or vegetable products. They are found in milk, whey, the yellow of the egg, the brain, the liver, the pancreas and a little in muscles. They exist in great quantity in yeasts, and also normally in the roots, stems, leaves and fruits of vegetables and in the grains of cereals.

For this reason the excessive boiling of flour impoverishes it by depriving it of the vitamines it may contain. Foods deprived of vitamines B would cause beri-beri.

2nd Group.—Known under the name of Vitamines A. Insoluble in water but soluble in alcohol, in fats and oils. Sterilization does not seem to have any action upon them. They are to be found in great quantities in fats, in butter, in cod liver oil. They do not exist in most vegetables. They are found in very small quantities in roots, especially in carrots and in some tubercles.

The absence of Vitamines A. in food would produce certain eye troubles, such as oedema of the lids, xerophtalmia, etc. They would seem to act particularly on growth. Some authors attribute rickets to the absence of vitamines A. in food.

3rd Group.—Vitamines C. or anti-scurvy vitamines, so named because their absence, according to some authors, would cause scurvy. Vitamines C. are found in raw potatoes, in cabbage, dandelion, sorrel, lemon, oranges, green vegetables. They are also found in milk in more or less great quantities according to the animal producing milk. Vitamines C. are very sensitive to heat. But lemon juice and sorrel preserve their vitamines after heating up to 110° centigrade.

From this, it should be concluded—

(1) That the mother who feeds her child must have recourse to foods rich in the vitamines indispensable to nutrition;

(2) That the disadvantages of purifying milk from microbes through heat should not be exaggerated.

The boiling and pasteurizing of milk such as practiced at home leave enough vitamines in milk. Even industrial sterilization if recently done, deprives milk of vitamines but exceptionally. It is the ageing of milk after pasteurization that causes the disappearance of vitamines. When they are found to be insufficient in foods and especially in milk, they can be replaced by other vitamines such as those of vegetable broths, lemon, orange or grape juices.

Hygiene of Artificial Feeding.

The rules of artificial feeding are based upon those of breast feeding. The dilution of the milk only providing for somewhat larger quantities.

The digestability of cow's milk being inferior to that of mother's milk, it also becomes necessary to lengthen the interval between each meal, thus giving three hours instead of two hours and a half at the outset.

Morfan sets the following rules:

During the first month, equal parts of milk and boiled sweetened water; during the second and third months, two parts of milk to one of boiled water; at the fourth month, three parts of milk to one of water.

If this mixture is well tolerated, pure milk is then tried. Thus the child takes daily seven meals of 90 grammes of milk (about three ounces); 100 grammes during the second month; 120 grammes (about four ounces) during the third month; 125 grammes during the fourth month; from the fifth month, milk shall be given pure; from the sixth to the ninth month, about 175 grammes of pure milk (about six ounces) form a meal.

The above is only mean quantities and should be administered only to children weighing seven pounds at birth.

As the digestive aptitudes varies with each child, as well as the average growth, it is not an easy thing to establish a general rule. The child's weight should serve as a guide.

Other Measures.

Mothers should pay a daily attention to the color of the children's stools which is the guide to the way in which digestion is done. Normal stools are pasty, nearly odorless and of a sulphur yellow colour and non-acid.

Stools showing white and hard lumps signify that the milk was not well digested, that there is an excess of casein, over-feeding or stomacal dyspepsia. When the lumps are pasty and easily crushed, they show that fats have not been digested or that there is an excess of cream or intestinal dyspepsia. Stools that become foul smelling show that there exists abnormal fermentation. Their coloration in green shows a biliary excess or intestinal infection.

Acidity of the stools produces an irritation of the skin which reveals itself by redness of the seat and around the anus. Acidity is in this case caused by the fermentation of milk fats. In this state, the milk contains more butter fat than the child is able to assimilate; the milk should then be skimmed.

Diseases of Childhood.

The diseases appertaining to childhood are few and drugs should be used sparingly. Severe hygiene and proper diet are sometimes more efficient than the best prescription. Parents should never worry because their physician does not prescribe and they

should never give any drug to a child without the advice of the doctor.

Soothing syrups of all kinds, nostrums and too well advertised remedies with false and glowing testimonials are baby-killers and should be left upon the shelf of the store. They may cause untold misery and even death.

Always be suspicious of diseases which start insidiously as they very often may be the onset of a severe illness.

To prevent smallpox all children should be vaccinated before they are four months old, and even at birth whenever there are any cases of that disease in the neighborhood.

When a child has diarrhoea, the doctor should be called at once. It often happens that this is done too late. As soon as green stools appear, stop all feeding and give the child a dose of castor oil. Then give him only boiled water instead of milk.

When the doctor does not come at once, continue giving the child boiled water during 24 and even 36 hours; if the stools do not improve then give him barley or rice water at meal time, increasing meanwhile the intervals between each meal as the digestion is slower.

Never allow the whims of a child to guide you. His age does not prevent a child from understanding that by crying he may bring you to satisfy his desires. He will cry whenever he wishes to drink, to be taken off his crib, to be fondled, carried about or rocked. Parents who do not learn to resist such appeals from the first day, will only lay in store for themselves all sorts of annoyances and trouble and will render their child the worst service.

Respiratory Organs.

A great number of children die during their first or second year from diseases of the respiratory tract, especially from bronchopneumonia. Such diseases are chiefly caused, especially during winter when houses are far too much heated; by sudden changes in the temperature.

Tuberculosis may attack a child from his birth until his third year, and for this reason he must be kept under strict supervision. A child living with tuberculous patients is an easy prey for this disease and for that reason should be taken away as soon as possible.

In France, Dr. Grancher, has founded an institution which takes care of such children, especially in the country. Its purpose is two fold; to save the child and keep him in the country.

The greater number of such children are entrusted to the care of farmers; nurslings are placed in special houses under the care of physicians and nurses.

This institution has given such good results wherever it exists that it is no more permissible to ignore it in this country where efforts should be made to establish it as soon as possible.

Tuberculosis of the milch cow is more prevalent than is thought of in this country. The child until three years old is very often fed only cow's milk and is thus exposed to the contagion. The tuberculin test whereby tuberculosis is found in milch cows should be more generally practiced in this country. Until this is done, a good means of protecting our population against tuberculosis of bovine origin is the pasteurization of milk of which we have already spoken. Industrial pasteurization is easily made in cities; in the country, home pasteurization of the milk should be resorted to as more practical.

Infants Asylums.

The usefulness of infant asylums is well known; those houses in which children are taken care of for the day, while the mothers are out at their work, and where the care of children is taught, are institutions which should exist in all cities.

Baby Clinics.

Mothers may find all the knowledge they should have to protect their babies against disease in health centres known under the various names of *Gouttee de Lait, Baby Health Centres* or *Clinics*. The consultations given in these institutions are followed up in the families by visiting nurses.

Baby clinics were first instituted in 1892 by Prof. Budin of the Hospital de la Charite, Paris. Since then they have scattered all over the world and have given the most encouraging results. There are quite a number of them in Montreal and in other Canadian cities where they do a great deal of good. They should become more numerous and every physician ought to help their spread.

Pre-school and School Period.

During this period, children are more exposed to diseases of nutrition like ricketts and also to contracting contagious diseases. When the time comes of attending school, children should be closely taken care of. They then often suffer from physical effects

which may hinder their growth, diminish their resistance to illness and make them a prey to various disease of which the principal is tuberculosis. For this reason, the medical inspection of schools should exist in every part of this province. Von Pirketts test for children of pre-school and school age as tried at Framingham gave very good results.

The teaching of hygiene should be made general and compulsory in all our schools.

In late years, our teaching orders of the Province of Quebec have gone far in the good direction by giving such an education. In all primary schools there should be elementary course in hygiene which could be completed in normal schools, colleges and convents. Students in the higher educational establishments should be taught in their last year the more advanced notions in hygiene and especially concerning venereal diseases. Our silence on this point might be held in reproach against us by unconscious victims of these diseases. It seems it would be much better were such notions to be given by physicians with all the necessary precautions than leaving our boys and girls to learn them in conversations and in books where they are not always given with proper discretion and clearness.

Contagious Diseases.

Contagious diseases are the bane of our families in an alarming proportion, on account of the ignorance of too many persons. At the Provincial Bureau of Health, we find it very difficult to get all physicians to make the necessary declarations. Cases are kept secret and quarantine rules are too often ignored.

One may too often see children suffering from contagious diseases brought in moving picture theatres, a fine and successful way indeed of spreading them. It does not require after all so much thought to see that isolation, quarantine, disinfection are the best weapons against communicable disease and for curing those affected with them.

You have had distributed to you some forms for epidemic enquiry and you see there is a card offered which we prepared for the use of the municipal authority. That card is so simple to fill in they only write the name of the disease and how many cases and the officer has only to sign his name and post the card in the post-office free. One goes to the District Inspector and the other one goes to the Provincial Board of Health. Since that card has been

distributed to the Provincial and Municipal authorities they comply very easily. We receive the declaration from the local municipal authority much better since that card is used but the trouble is with the doctor. Doctors very often do not declare their case in the Province of Quebec. There is the trouble, but when the doctor declares the municipal authority sends us that card rightly.

The other forms are for the enquiry of communicable disease, one form for each disease. The local Health Officer is called on to fill that form and send to the District Inspector. As soon as a communicable disease case is noticed in a municipality if they send in that form we can act immediately.

The Prevention of Cancer*

By Adam H. Wright, B.A., M.D., Chairman, Provincial Board of Health of Ontario.

THE statement that cancer is increasing and that it is due chiefly, or at least largely, to certain habits and customs closely connected with what we call civilization is not new. In fact it is very old.

Many in Europe and America are convinced that a large proportion of internal cancers, especially of the alimentary canal, are caused by supposedly simple (although often really very complex) disorders, which can be prevented or cured before the formation of malignant growths. Therefore internal cancers are to some extent at least preventable.

Intestinal Stasis.

"To the genius of Sir Arbuthnot Lane we owe our understanding of the far-reaching effects of chronic intestinal stasis. Although we have not yet found the full solution of the cancer problem may we not justly believe that we are at the dawn of a new era in the prevention of this dread disease?"

This statement, almost, if not quite, startling in character, was made in an address delivered to the Hunterian Society by Dr. A. C. Jordan, President of the Society, and published in the *British Medical Journal*, December 25th, 1920. It seems to me one of the most important statements ever made in the history of medicine.

The distinguished Colonel McCarrison says that in his experience during nine years of professional work, chiefly surgical, among several uncivilized races in Central Asia, he found no asthenic dyspepsia, no ulcer of the stomach or duodenum, no appendicitis, no mucous colitis, no cancer.

Lane attaches much importance to McCarrison's statements, which are in accordance with his own experiences, and states positively that intestinal stasis produces cancer either by traumatism or indirectly by the deleterious influence exerted on the tissues by the toxins circulating in the blood.

Jordan tells us that in chronic intestinal stasis active pathogenic bacteria thrive in the bowel. These form poisonous products in the intestines which are carried by way of the thoracic duct into the general circulation, and thus reach every living cell of the body. No tissue or organ can resist their baleful influence; every tissue attacked by them loses some of its

*Read at the Annual Meeting of the Ontario Medical Health Officers' Association, May 22nd, 1923.

power of resisting pathogenic influences, and this lowered resistance has a very potent influence in favoring the occurrence of cancer.

"Colitis leads to cancer." X-ray investigation shows that chronic catarrh of the large intestine is an extremely frequent condition in stasis. It is obstinate to treat, slow to recover, and apt to relapse. This catarrh is called colitis: mucous, membranous or ulcerative. In the more advanced stages, although there may be no definite ulceration, there is always erosion of the mucous membrane—a condition which encourages the occurrence of malignant growth. My own opinion has always been, and is now, that in the treatment of cancer we have to rely chiefly, or always when practicable, on surgery or irradiation.

Physicians and surgeons are approaching agreement in certain points as follows: cancer is produced by irritation. It begins in a certain spot. If not cured, destroyed or cut out, it spreads and becomes constitutional. The irritation may be physical as, for instance, lumps of food rubbing against the mucous membrane of the stomach, or lumps of fæces against the mucous membrane of the bowels. Or it may be chemical from the action of the poison in the blood on the cells of the tissues. This chemical theory is doubted by many, especially surgeons.

Intestinal stasis is the primary condition in 90 per cent. of internal ailments, *i.e.*, those first appearing anywhere between the œsophagus and the lower end of the rectum. I think it causes, directly or indirectly, more than half of all cancers of the bowels. The prevention of stasis, or its cure in the early stages, will, in a large proportion of cases, prevent the formation of cancer. The two conditions closely associated with intestinal stasis, as cause or effect or both, are indigestion and constipation. These are both serious ailments. Indigestion should always have careful treatment, and its cure is often difficult.

The housewife knows what will happen if she leaves meat, milk, eggs, fruit and other foods exposed to the air in a room with a temperature of 90° F. They always "go wrong." Similarly when undigested or partially digested food through stasis or partial stasis is retained too long in the intestinal canal where the temperature is about 100° F. fermentation and putrefaction occur, resulting in a filthy and poisonous condition of the bowel contents and a general toxæmia, which is really blood poisoning.

Cancer of the Gastro-Intestinal Tract is Steadily Increasing.

Let us consider some phases of cancer of the stomach. In connection therewith I shall take the liberty of speaking personally. In my earlier years of practice I was duly impressed with statements then made which have been repeated by many up to the present time: that cancer of the stomach comes suddenly without warning like a "bolt from the blue." About forty years ago I commenced to study very carefully certain cases

and I reached the conclusion that there were generally preceding symptoms which were then and are now frequently designated ordinary signs of simple indigestion. Then I began to think there was no such thing as simple indigestion. For over thirty years I have always treated indigestion carefully, having in mind the possibility or probability of cancer as the end result, and I believe that I have sometimes, perhaps frequently, prevented the dread disease. I have no means of proving the correctness of such a statement; but I feel certain that careful treatment of these so-called "minor ailments" always produces certain good results, and I thoroughly agree with the teachings of Sir James McKenzie in this phase of therapeutic measures.

Allow me to quote again from Dr. Jordan: "I find myself in direct disagreement with the view that cancer of the stomach comes generally 'out of the blue' with no preceding history of gastric trouble. I can scarcely recall or find notes of a single case which supports the notion that cancer comes 'out of the blue.' In nearly every case there is a life-long history of constipation, flatulence or biliousness, and radiological investigation reveals incontrovertible evidence of long standing disorder."

Dr. Fred. Starr read a very interesting paper in Ontario County last October on "Cancer of the stomach," his main object being to show the vast importance of early diagnosis. In his last thirty-nine cases up to the end of 1921, he was able to perform a radical operation (resection) in thirteen cases. He was able to do only a palliative gastro-enterostomy in twelve cases. Of the whole number, eight were living and well when he wrote—from one to five years respectively after the operations. This goes a little beyond our subject (prevention), but in addition to the advisability of early study of symptoms, it is encouraging to learn that surgery can do so much in the early stages. But even so Dr. Starr will, I think, agree with us when we say prevention is better than the best surgery.

In connection with intestinal stasis the mind naturally turns at once to constipation as the chief cause. I think it was Leonard Williams who first said "Constipation should be one of the easiest things to diagnose, but it is really difficult." Many people who have what they consider daily motions have seldom complete evacuations of the bowels; and such people are often "walking septic tanks." The intestinal canal is large (capable of much distention) and long—over twenty feet of small, and over five feet of large intestine. If one goes to the closet and simply empties a few inches he may not accomplish much in the way of general housecleaning.

And now please let me give my personal "Confession of Faith": We use faulty foods, or good foods badly balanced, or both. As a result there is not proper digestion. Fermentation takes place in certain foods,

especially the starchy; putrefaction in others, especially the protein class—meat, eggs, milk, etc. Those evils are increased by constipation with intestinal stasis. As a consequence we get upset metabolism with the production of poisons which are absorbed and pass into the system. With these evils we have mechanical irritation, and catarrhal inflammation with the formation of ulcers of the stomach, small intestines, and large intestines, which sometimes develop into cancers.

For thirty-five years I have consistently and persistently endeavored to prevent cancer of the gastro-intestinal tract by the following means: (1) preventing faulty diet; (2) treating early symptoms of indigestion; (3) preventing intestinal stasis; (4) treating intestinal stasis as early as possible. It is easy to give these simple directions, but often a difficult task to carry them out efficiently. The methods and remedies to be employed are so multitudinous that no attempt will be made to describe them. Fortunately all efforts in the direction indicated will do some good, they cannot in the least degree be harmful. Moreover, I can say with confidence that I believe they will, in a large proportion of cases, prevent that worst of modern scourges—cancer, and also, it happens fortunately, other serious diseases.

Discussion.

Dr. Fred Cleland: Now that you have learned from the previous speakers how very little we really know about cancer, what are we to do about it? The only point upon which we all agree is that cancer is curable by radical removal in its early and localized stage. No matter where the cancer is situated, this is true; and we also know that it is invariably fatal if it is not removed. As regards cancer of the uterus and cancer of the breast, the operative technique has been perfected to a very high degree and nothing more can be hoped for in this way. As the possibility of a cure is dependent upon early diagnosis and operation, a great responsibility rests upon the physician first consulted, and it is, therefore, his duty to positively exclude the presence of cancer before any other treatment is instituted. I believe, however, that delay in consulting a physician is more frequently due to the insignificance of the early symptoms than to the carlessness either of the patient or physician. In many cases a patient puts off going to a doctor because she thinks that cancer cannot be present without producing pain, because she is afraid of a surgical operation, or because she is reluctant to submit to the necessary examination. The American Committee for the Control of Cancer suggests that a legitimate use can be made of publicity in the education of the laity by giving lectures, sending out pamphlets, etc., the work being done under the control of physicians. This society has already incorporated a campaign along these

lines, and I would ask you to be sympathetic in your attitude toward it. It has proven to be of great value in other countries.

Several years ago a campaign for the education of physicians, midwives and the general public in the symptoms of uterine cancer was started in East Prussia by Winter. The methods adopted were the following:—

1. All general practitioners throughout East Prussia were instructed in the methods and importance of early diagnosis.

2. Midwives were instructed to send suspicious cases immediately to the physician.

3. Articles were published in important newspapers, informing the public as to the early symptoms, and urging them to seek immediate advice.

The reports obtained showed that in the period from 1889 to 1902 the patient was examined internally by the physician at the first consultation in 46 per cent. of the cases, whereas in 1910 this was done in 100 per cent. In 1889-1902, the midwife sent the case immediately to the physician in 32 per cent. of the cases; in 1910 in 55.8 per cent. In 1889-1902, the patient sought advice soon after noticing the first signs of cancer in 62 per cent. of cases; in 1910 in 69.8 per cent.

The good results of this campaign have led to the formation of similar organizations throughout Europe and in the United States.

Knorre reports the results of a similar campaign in the Baltic States of Russia, commencing in 1908. Three years later replies to a second series of letters showed the following results in 504 cases:

Thirty-nine per cent. consulted the physician within three months after noticing the symptoms, as against fifteen per cent. at a previous investigation. In five per cent. only had local treatment, douches, etc., been prescribed without any internal examination by the physician first consulted. Only a few physicians reported any increase of nervousness in regard to cancer.

At a meeting of this kind, it would be out of place to take up time discussing the merits of the different forms of treatment, or to discuss the relative applicability of surgery, X-ray or radium; but I know of no other body of physicians to whom an appeal for co-operation in the early diagnosis might more rightly be made. The Public Health Association can do much in educating the public to seek help early for relief in this terrible disease, and I ask from you your hearty co-operation in the efforts of the Society for the Control of Cancer.

Ottawa Social Hygiene Council

EXHIBIT FOR "MEN ONLY," CENTRAL CANADA EXHIBITION, OTTAWA, ONTARIO, SEPT. 7 TO 17.

EARLY this summer the Ottawa Social Hygiene Council approached the authorities of the Central Canada Exhibition with a formal request for space in which to display an exhibit for Men Only for the purpose of showing, by means of posters, slides and wax models, some of the incidences, ravages and methods of prevention of syphilis and gonorrhoea. The request was favourably considered and a choice of two or three spaces was offered, but these were considered by the Council to be inadequate for the nature of the exhibition. Representations to this effect were made to the Directors, with the result that finally a large space over the Fire Hall was offered and accepted. The position was very prominent, but the Council felt that the fact of being upstairs might keep many from dropping in who might have done so had it been on the ground floor; but it was also felt that the subject was of sufficiently interesting nature to make a trip upstairs worth while, which conviction proved correct.

The entire wall space was covered with interesting illustrated posters from England and the American posters "The Venereal Menace" and "Keeping Fit" for boys and adults; portraying the right and wrong way of teaching children about sex matters and the ultimate result of each method; others illustrating the value of healthy sports, physical training, regular habits, wholesome literature, art, etc., in the life of every child in producing soundness of mind and body. Others still, showing by statistics and illustrations, the terrible ravages caused by Venereal Diseases, how these are caused and how they may be avoided, also the contrasting joys and happiness of normal healthy living. To these were added a few illustrated cards advertising the literature procurable and the free clinics in Ottawa and Hull for the treatment of venereal diseases.

Through the courtesy and co-operation of the Provincial Board of Health, Toronto, the council was enabled to display, for the first time in Canada, some very valuable life-size wax models procured by the Board of Health from Paris, France, and loaned to the council. These models are copied from life in wax and painted by artists to represent cutaneous lesions of syphilis and gonorrhoea.

An attractoscope, loaned by the Canadian Social Hygiene Council, was conspicuously placed in the room. This ran continually, displaying slides

of much the same nature as the posters in story form. The slides were produced by the American Social Hygiene Association, series 100 to 600 inclusive, all of which were of educational value in regard to sex hygiene, venereal diseases, their causes, prevention and cure, including the dangers incurred by resorting to unorthodox and self treatment.

An abundance of pamphlets issued by the Federal and Provincial Governments (Departments of Health) were placed conveniently on tables with cards inviting the public to help themselves. These pamphlets dealt with syphilis and gonorrhoea and sex hygiene for men. Other literature of valuable educational nature, pertaining to sex matters, child questions and answers, etc., was available for purchase at cost price.

Dr. Hunter and Dr. Beatty, from the Ottawa General Hospital, volunteered to take charge of the exhibit every afternoon and evening, and through the kindness of the Medical Officer of Health, an inspector was loaned by the City Health Department to take charge in the mornings.

The exhibit was opened to the public at noon the first day and in less than half an hour, the large canvas sign outside the door downstairs had encouraged many to come upstairs to see this unique exhibit. The first day, being Children's Day at the Fair, the Doctors were kept busy trying to keep out the very small boys, as it was not considered advisable to admit boys under 14 years of age, unless accompanied by their fathers. All advertisements clearly stated that the exhibit was "Free for Men Only"; in spite of this, however, many women found their way upstairs, either with their husbands or friends, only to be told at the head of the stairs that no ladies were admitted, at which much disappointment was evidenced. This continued to happen at intervals during the first two or three days until the exhibit was better known. Before the exhibit closed the first night at 11 o'clock between seven and eight hundred men and older boys had visited our rooms, and we are pleased to report that from the first moment the exhibit opened, every man and boy who came to the room showed extreme interest in everything. The posters were all carefully read, interested groups gathered about the attractoscope and the glass cases containing the models. Never on any occasion was there any rowdyism, roughness, laughing, jeering, jostling or anything disorderly in the manner of the crowd, but always an atmosphere of keen interest and thoughtfulness.

When the inspector arrived each morning, small groups of men were already waiting to be admitted, as they said they were busy through the day and could only come early. It was necessary to close the exhibit for an hour or more each morning for the purpose of cleaning and readjustment, and there was always a group waiting to get in when the exhibit was again declared open. Each day showed a large increase in the attendance, the second day amounted to between twelve and thirteen hundred and on

the last four days there were between two thousand and two thousand five hundred each day, so that we estimate that the exhibit was seen by between twelve and fifteen thousand men and boys during the week.

Dr. Hunter found that people at first seemed reticent about asking questions or buying literature, in spite of printed cards saying that the Doctor in charge would be pleased to answer any questions and supply special literature upon request. He, therefore, decided to give a little talk periodically, explaining the wax models, and stating that he would be pleased to answer any further questions, telling them also of the value of the literature on sale. This increased the interest and encouraged people to ask questions, it also gave the doctor an opportunity of getting in closer touch with those who were anxious for further information. This was rather a strenuous undertaking, but very much enhanced the educational value of the exhibit.

His Worship, the Mayor of Ottawa, came with some friends to view the exhibit and expressed himself delighted with it, stating that it should have been shown years ago and was absolutely what was needed. He went away and returned with another group of friends. The Doctors report that this occurred many times throughout the exhibit. They noticed several men who came again and again bringing different friends with them. A prominent man of a near-by town asked if it would be possible to loan the whole exhibit for the annual fair there, but later wrote that it would be difficult to provide sufficient space at the fair and they would like to have the exhibit shown separately at a later date. Amongst hundreds of favourable remarks heard from time to time, we are pleased to report that one man told the Doctor that he and his son had come over 30 miles to the exhibition, and if they did not see anything else but our exhibit, they felt that their trip had been more than worth while.

The Doctors reported that while at first the crowds came as a result of advertisement cards and posters distributed throughout the grounds, they soon realized that they came later because some one who had seen had told them about it. The entrance gates could be seen from our windows, and men could be seen coming direct from the gate to our exhibit. The Doctors also noted that many women who came to the Exhibition with men waited for the men downstairs while they came up to our exhibit, and many men inquired as to when the exhibit would be shown to women and if there would be further opportunities of seeing the exhibit after the Exhibition had closed.

This being the first time that these wax models and such an exhibit had been shown in Canada, it was an experiment which might have caused adverse criticism, but the council is pleased to report that nothing of the nature has reached our ears, and we have received nothing but favourable reports and hearty co-operation from everyone. We have since learned

that the first day the exhibit was opened, the Police advised the Exhibition authorities to close the exhibit, as such exhibits had been attempted elsewhere and had always had to be closed. But the authorities advised the police that part of the exhibit had been loaned by the Provincial Board of Health and that the council was co-operating with the Government in its educational campaign against venereal diseases, and we were permitted to carry on. While it was never necessary at any time to ask for assistance from the police, they always gave us to understand that they were ready to do what they could for us when we required them, and they always kept a careful watch for us at night, as did the firemen stationed in the fire hall below us.

The Council feel very gratified that the experiment seems to have met with such success and they feel quite justified in asking for larger space next year, being confident that the Exhibition authorities will continue the same measure of courtesy and co-operation extended this year. Our sincere appreciation is extended to them, to the Secretary and Superintendents of the Fair, to the Provincial Board of Health, the Canadian Social Hygiene Council, the Local Board of Health and especially to Dr. Hunter and Dr. Beatty, whose untiring efforts enabled the Council to successfully accomplish one of its largest undertakings.

At the request of one or two Doctors, the exhibit closed to men for an hour or so one or two mornings in order that some of the city nurses might have an opportunity of seeing the models, etc., and upon their suggestion the Council is now considering an exhibit in the near future for Women Only.

Canadian Social Hygiene Medical Report Appears

A Report of the Medical Committee of the Canadian Social Hygiene Council on the Standardization of the Diagnosis and Treatment of Venereal Diseases, has just been put in circulation by the Department of Public Health at Ottawa by whom many thousands of the Report have been issued.

The Report represents the work of a committee of thirty-five prominent men and women physicians acting under the able chairmanship of Dr. Edmund E. King of Toronto. Final editing of their findings and recommendations was done by Dr. J. J. Heagerty, Chief of the Division of Venereal Disease Control in the Dominion Department of Health, and the intention is to place a copy in the hands of every practising physician in the country.

The Report, which is a well produced pamphlet of twenty-two pages, includes the following sections and sub-sections: Medical Research and Laboratory Questions; with sub-sections dealing with Licensing of Men doing Wassermann Tests and Standardization of the Methods of Making Wassermann Tests; Diagnostic Tests in Syphilis by Demonstration of Treponema Palladium; Significance of Wassermann Reaction; Negative Wassermann Reaction; with sub-section Precautionary Measures; Wassermann Tests in Connection with the Treatment of Syphilis Especially as an Evidence of Cure; Treatment of Syphilis and Relative Value of Arsenicals and Non-Arsenicals; with sub-section Eligibility of Marriage; Minimum Requirements of Treatment; Treatment of Syphilis; with sub-sections dealing with Early Primary Cases, Dark Field; Wassermann Positive, Secondary, Tertiary and Latent Syphilis; Hereditary Syphilis; Early Preventive Treatment against Syphilis; Gonorrhoea; Treatment of Acute Urethritis; Complications of Gonorrhoea in the Male; Chronic Gonorrhoea; Pelvic Gonorrhoea; with sub-sections on treatment and standard of cure; Treatment of Chronic Gonorrhoea; with sub-sections on Clinical Examination, Bougie a Boule, Urethroscopy, Blood Examination, Treatment and Standard of Cure; Gonorrhoea in the Adult Female; Treatment of Gonorrhoea in the Female; Diagnosis of Gonorrhoea in Children with sub-sections on its Treatment, the Rationale, Complications and the Standard of Cure of Vulvo Vaginitis in Children.

The Report recommends that "all laboratories, including university laboratories, doing Wassermann tests, shall be licensed by and under

the supervision of the Provincial Board of Health" and urges "private, university, hospital, municipal and provincial laboratories, in the use of these tests, to adopt recognized methods, so as to approach uniform results for the purpose of comparative study."

This valuable Report is expected to prove of immediate and practical usefulness to every practitioner in Canada and cannot fail to become an indispensable adjunct to all who make a specialty of the treatment of venereal diseases.

The personnel of the Medical Committee whose extended labours have resulted in its careful preparation and publication is as follows: Chairman, Dr. E. E. King; Secretary, Dr. C. H. Archibald; Members—Dr. Gordon Bates, Dr. Kendal Bates, Dr. Noble Black, Dr. W. Colling, Dr. M. A. Cox, Dr. H. C. Cruickshank, Dr. H. K. Detweiler, Dr. E. C. Dixon, Dr. W. E. Ferguson, Dr. A. G. Fleming, Dr. Edna Guest, Dr. C. H. Hair, Dr. E. B. Hardy, Dr. F. W. Hassard, Dr. Hewett, Dr. G. Howland, Dr. W. Jones, Dr. W. W. Lailey, Dr. Lillian Langstaff, Dr. J. C. McClelland, Dr. R. A. McComb, Dr. Alex McKay, Dr. F. W. Marlow, Dr. E. A. Morgan, Dr. R. W. Naylor, Dr. H. E. Paul, Dr. Robin Pearse, Dr. G. W. Ross, Dr. Geo. S. Strathy, Dr. E. J. Trow, Dr. W. T. Williams, and Dr. A. I. Willinsky.

The Canadian Social Hygiene Council will follow this Report immediately by another one on the same subject prepared specially for the instruction of nurses and for use in all training schools throughout Canada.

Social Background

A Social Study of Clinical Cases

BY MILDRED KENSIT.

THIS afternoon I am going to tell you some facts about the social conditions of Venereal Disease patients, as disclosed by a recent survey that I have just completed for Dr. Gordon Bates in Toronto.

The great difficulty one has met with in the past in discussing the question of the social aspects of Venereal Diseases has been the lack of available data. To reach the public and to make them realize the seriousness of the social problem of Venereal Diseases, rampant among all communities in which we live, it was felt that the quickest way to bring these problems home to the public mind was to collect certain facts from the patients themselves. With this end in view, I was instructed by the Toronto Social Hygiene Council to search the actual social case sheets and records of Venereal Disease patients attending hospital clinics in the City of Toronto and the Mercer Reformatory, and in the case of women patients a personal interview was sought and many additional facts were obtained not before recorded. Very few cases of either men or women who denied immorality, but claim they were innocently infected are recorded in this survey, because one of the principal ideas in making the survey was to try and arrive at causes and conditions which lead to immorality, followed as a result by infection of Venereal Diseases. 156 records were examined, 100 being women, and 56 men, the large majority of the women being personally interviewed after a study of their social case sheet. The main points it was desired to find out were:—

1. What standard of education had been reached by each individual and at what age did the girl or boy leave school, and what were their reasons.
2. What occupations did they follow on leaving school.
3. How did they spend their recreation hours.
4. What were the home conditions.
5. At what age did immorality take place.

Address given at the Social Case Workers' Conference of the Neighborhood Workers' Association, April 18th, 1923.

6. What were the circumstances surrounding and leading to immorality.

7. What sex education had they had.

I am not going to give you a formidable array of statistical figures which are easier to understand when one can study them quietly from a written report, but rather I want to make you see through my eyes some of the circumstances that surround the scourge of Venereal Diseases, that you may feel spurred to fresh efforts and to aid to the uttermost of your power the organized efforts that the Hamilton Social Hygiene Council is making to meet some of these problems.

Let us now return and examine in detail the points I have already referred to. As regards the standard of education reached by the patients, it was found that most of them had had some education at public school, but that only a small percentage completed public school grades or went on to High School. The standard of education was higher among the men than among the women. Among the women 13 per cent. left in Junior III. as against 2 per cent. of the men in Junior III.; 11 per cent. women left in Senior III. as against 7 per cent. of the men; 15 per cent. women left in Junior IV. as against 23 per cent. of the men; 14 per cent. women left when they reached Senior IV. as against 1 per cent. of the men, while only 5 per cent. of the women went on to High School while 13 per cent. of men spent over one year in High School. The lower grades make up the balance of the 100 per cent.

Most of the men and women left school for economic reasons at the age of fourteen years. The next step in the investigation was to ascertain what occupations were followed on leaving schools. The women were namely absorbed into domestic service, factories, waitresses, clerks, hotel maids and prostitutes and a proportion were living in their own homes. Among the men about one-third entered some trade and the rest became drivers, labourers, clerks, mechanics, chauffeurs and salesmen.

The occupational work of men showed that they do not change the kind of work in which they are engaged as the women do. It is difficult to give exact figures as to the occupation of women as it was found they so frequently changed their work, remaining for a year or two in domestic work, then perhaps trying factory work or becoming waitresses in restaurants. One very prominent fact was shown up in tracing the social conditions of women and that was the ever recurring tale of starting life after leaving school in do-

mestic service, then in a year or so, sick of domestic conditions and isolation, they drifted into cafes as waitresses and from there the next step was to become a prostitute. These steps were traced in the lives of no less than 22 per cent. of the women interviewed. Approximately 53 per cent. of girls leaving schools go into domestic service. Of this number only 15 per cent. remained in housework.

The domestic question is one of the acute problems of to-day from three points of view. The mistresses' briefly stated is the shortage of supply and the inferiority of the supply when obtained.

The girls' point of view is the lack of any interest as to her recreation hours or circumstances, her exceeding isolation and loneliness in service, which drives her into danger or out of service altogether.

The concern of the community is that 50 per cent. of the unmarried mothers are provided from the domestic class, that 30 per cent. of the illegitimate children die in infancy and 7 per cent. of the children born of unmarried mothers have Venereal Disease.

The question of recreation is a very important one and a very big problem in the life of the community. Economic conditions which tend to gather large numbers of people in congested areas, lead to overcrowding in living conditions and lack of play spaces. It is only within recent years that people have begun to realize the necessity of providing healthy normal play facilities which play so large a part in the normal development of the human race.

To commercialized recreation such as movies and dance halls, which the survey showed ranked as the leading attraction, patronized by more than 65 per cent. and 56 per cent. of the patients respectively, and which cater to the desire for excitement in contrast to the monotony of industrial and domestic life, is added the obsession of motoring, which permeates society from top to bottom. The auto to-day enters largely into the downfall of men and women. I say both sexes advisedly, for though it has been customary in the past to speak of the downfall of the girl alone, the man's immorality is just the same moral sin as that of the girl and its results are the same in the resulting infection of Venereal Diseases. In 48 per cent. of girls' immorality the motor car is an important factor.

Now, I want to show you briefly what a strong influence the lack of normal home conditions has in its effect upon immorality. It is a well-known fact that what is known in social parlance as "broken homes", that is to say where either one or other of the

parents is missing, either being dead or has deserted or some other separating factor operates, plays a large part in the making of delinquent boys and girls. The following table shows that these conditions existed in 69 homes out of 100.

Death of father	18
Death of mother	23
Desertion by father	5
Desertion by mother	2
Parents separated	9
Institution (orphan)	7
Drink (on part of parent)	4
Sickness (on part of parent)	1
	69

Therefore "broken homes" entered into the social conditions of 69 per cent. of girls examined.

Home conditions among the men did not show the same relation to immorality as in the case of women. Immorality appears to be looked upon by men as a legitimate practice in response to their desires. I found the men were not generally immoral so long as they were married. Statistics showed that 94 per cent. of the men practised immorality while they were single.

As might be expected immorality was largely among the single, 77 per cent. among the women were immoral while single.

The investigation showed that the greatest immorality takes place among young girls at the ages of 15, 16, 17, 18 and 19 and among the men at the ages of 16, 17 and 18.

The facts as revealed by the investigation as to the location of immoralities shows that the auto to-day plays a most important part and in relation to the opportunity to get out of the city figures largely in the place at which immorality takes place and appears gradually to be relegating the regular house of prostitution into the background. Among the women 45 per cent. were immoral while out in autos and with an additional 15 per cent. out on the country roads in which the auto played its part in getting away from the city shows that in almost 60 per cent. of cases of immorality, the auto is the predominating factor.

Other locations in their order of precedence were girls' rooms, 20 per cent.; hotels, 19 per cent.; houses of prostitution, 18 per cent.; men's rooms, 11 per cent.. Another phase in the auto traffic was the frequency with which the girls were known as "on call",

that is to say, the taxi drivers telephone girls who are prepared to expose themselves to the driver's customers. The usual charge of $3.00 for the girl and $2.00 for the driver. Among the men the figures were much the same except that houses of prostitution ranked higher with the man than autos.

The circumstances under which the men and women met was exceedingly difficult to classify, as both men and women come under several headings, sometimes one condition prevailing, sometimes others. The most common method of meeting is what is known as "a pick up" from the street, unknown to each other previously. The next in order was that of solicitation. One surprising fact was the frequent immorality between old friends. Only a small proportion were introduced to one another in a normal manner. Regarding the question of payment for immorality the following facts were disclosed. Over 48 per cent. of the women were paid cash varying from $2.00 to $15.00. Others accepted as payment clothes, meals, dancing and theatre tickets, joy rides in autos and 23 per cent. accepted no payment whatever.

Under the heading of Sexual History it was found that sex education was conspicuous by its absence and in a few cases where women said they had knowledge, when questioned, it was found that this knowledge only amounted to vague ideas not to do such and such a thing and the women had no real knowledge of themselves or the forces controlling their lives. Seventy-seven per cent. of the women had no sex education whatever. Most of the men admitted they knew very little about sex matters and where they had knowledge it was gained in the army.

The reasons given for first immorality fell mainly under five headings with the women in the following order. Mutual agreement, desire to have money to spend, persuaded at first, or forced the first time or under promise of marriage. Among the men the predominating factor was desire and in many cases under the influence of liquor.

I have given you a brief summary of some of the outstanding features in the survey of the social conditions of those infected with Venereal Disease among the delinquent class and patients attending free clinics of hospitals, which covers only one section of the community. The figures might not be so high were it leavened by the inclusion of the better educated with higher standards of life and ideals. I think you will agree with me that we have some big problems to grapple with, calling for preventive and

constructive work. A great deal of time, energy and money is being spent to-day on purely palliative measures, all very necessary but I think it behooves us to spend more of our energies for the future in constructive work which in the end lessens the necessity for the palliative work.

Some of the conditions now existing as revealed in the Survey might well be changed in the near future along the following lines:

1. Organized meetings to teach parents how to present to their children the facts of sex life backed by principle.

2. Improving the conditions of domestic service by interesting ourselves in the women's leisure hours.

3. The need of providing supervised boarding homes for girls living away from home.

4. Child Welfare work in all its branches commencing from prenatal treatment to diseased mothers, placing of children deprived of normal homes in foster homes rather than in institutions, provision of playgrounds in congested areas, which is as important in the normal development of children as education, Juvenile Courts with their ideal of protecting delinquent children rather than meeting out punishment.

5. Last, but not least, in importance is the great necessity that all organizations should keep full records of their cases and of the work done with their clients. This is an absolutely necessary basis for constructive work, both as regards a record as to what has been done and for such purposes as surveys to collect specific information as a guide for constructive action.

In conclusion let me once more stress the point, that though palliative measures to help present conditionss are necessary, let us turn our main efforts towards constructive work; we must build for the future through the children of the nation.

Correspondence

The Campaign Against Objectionable Literature

The letters printed below are a few picked from the many which have reached the office of the JOURNAL with reference to the editorial in the June issue entitled "It is Time to Act". Further correspondence on the subject will be printed each month.

University College,
September 19th, 1923.

Editor,

PUBLIC HEALTH JOURNAL:

I am sorry, but not surprised, to read what you say in regard to objectionable literature. I am not surprised because the attitude of the world in general has undergone a revolution in my life time in regard to matters of sex. Whatever of good or bad, this revolution may have, in either case, there is likely to be such a development as you indicate.

I have no belief in extension of government supervision. As far as I have knowledge, it never has been successful. The most fundamentally corrupting influences always seem to escape, because they are veiled naturally! In the matter of the theatre, it is notoriously a failure. Such interference is injurious because it always gives a sense of security.

Again, I don't believe in making people good by law and force. I do not, any more than Nulton who was both a liberal and a puritan, believe in a "cloistered virtue".

I am,
Yours sincerely,
W. J. ALEXANDER.

Editor,

PUBLIC HEALTH JOURNAL:

I was very much interested in an editorial which appeared in your June issue—"It is Time to Act"—dealing with the need for a closer supervision of the magazines and other literature being sold to our young people.

As this is a matter which concerns the welfare of the city, I shall be glad to do anything I can to further your ideas, and should appreciate it if you would let me have any further information you may

have on the subject, together with any suggestions you may care to make as to action which might be taken or restrictions which should be enforced.

Thanking you for bringing the matter to my attention through the medium of your editorial pages, believe me,

Sincerely yours,

ETHEL SMALL

(*Chairman, Toronto Board of Health*).

September 11th, 1923.

Editor,

PUBLIC HEALTH JOURNAL:

Your editorial on what Canadians read should be reprinted in every daily newspaper in Canada. There is no subject upon which there has been more official and individual apathy except that of bad movies which is a relatively recent menace and already shows some signs of betterment in conformity to public sentiment. Years ago when editor of the *Canadian Courier*—now defunct largely because of American magazine competition—I wrote a number of articles against this particular form of American penetration. Seven years ago the same paper began a pioneer campaign against the Menace of the Movies. The two are almost identical. The news-stands reflect very closely what may be seen almost any day on the screen, certainly what used to be the regular feature of the average movie a few years ago. That a partial reform has come about in moving pictures and only wholesale deterioration in undesirable magazines, is due to the fact that organized public effort has backed up unorganized public sentiment in one case and failed to do so in the other. Even yet there are movie posters quite as vicious as the magazines which your editorial condemns. I think there should be a general clean-up organization to get rid of both bad magazines and bad movies.

We have a Canadian Authors' Association whose primary function seems to be safeguarding of copyright. A stock grievance of members of that Association is that Canada is a poor market for Canadian writers; that many of our best writers have to cross the line to sell stories. Does it ever occur to the Authors' Association that Canada by this time would have become a fair market for Canadian writers if none but the better class of American magazines could be admitted to this country? When fifty per cent. of the literature-buying at Canadian news-stands consists of such matter as that to which your article refers, is it much wonder that Canadian periodicals have brief and hazardous lives, that some of them are still-born, that even the oldest of them have symptoms of anemia, and that it is economically impossible to maintain a good

Canadian feature magazine without a commercial organization to back it?

We hear a great deal from official and publicist sources about Canadian political autonomy. When did we ever hear a public citizen in Canada say anything about autonomy in literature, amusement and morals? It was the late W. T. Stead who in reply to what might be his opinion about ultimate annexation of Canada by the United States said that every nation "has a right to go to the devil in its own way". But Canada long ago abrogated even that privilege. We buy a large share of our bedevilment in literature, moving pictures and social sentiment from the exploiters of indecency in the United States.

A thinly-scattered nine millions of people adjacent to a nation of 110 millions highly organized in industry, finance, periodical literature, music and arts and theatricals, must of necessity have a heavy adverse balance of trade in most of these commodities. We are glad to be able to buy good music, good magazines, good books, good plays and good movies across the line, because we are unable to produce enough of these things for ourselves and cannot easily import them from Europe. But the bulk of our buying in entertainment goods is the kind of thing that better reflects a big nation which has had more experience both in great developments and in "going to the devil" than we have, ourselves. The "underworld"—much of it genuine, a great deal of it trumped up by vendors of cheap copy, may be a native characteristic of big American cities; it is native enough to some of our own; but in the name of any kind of autonomy if we have to deteriorate let us do it in our own way, and if we have any hope of developing a healthy big nation here let us cease to spend so much of our money and time and energy on importing vice.

Yours very truly,
AUGUSTUS BRIDLE.

September 11th, 1923.

Editor,
PUBLIC HEALTH JOURNAL:
Toronto, Ontario.
Dear Sir—

Your editorial in the June issue of the PUBLIC HEALTH JOURNAL has been placed befor me. In response to your suggestion, I would state that I believe that this much is quite within the limits of sane and sober criticism. I do not read all of the journal referred to and do not profess to be a literary critic. I do not believe that it would be wise for the Social Hygiene Council to be too energetic in the criticism of present day literature. Too often would-be uplifters and pussy-footers

endeavour to satisfy the torments of "A buried sex complex" by reading "forbidden" literature and thereafter rush into print to warn those whom they consider the weaker members of the human family.

Yours very sincerely,
J. HEURNER MULLIN,
Hamilton, Ontario.

592 Notre Dame Ave.,
Winnipeg, Man.

Editor,
PUBLIC HEALTH JOURNAL.
207 York Bldg.,
Toronto, Ont.

Dear Sir—

Allow me to congratulate you upon your editorial regarding salacious magazine reading, comment upon which is appearing in the Canadian press. If this means that you are inaugurating a campaign please count on me to help in any way possible; for while I am not one who believes much in censorship, I consider that there is a very insidious menace in the particular direction to which you point.

I am not in favor of banning American magazines or anything like that as I do not consider that Canadians can afford to become provincial in their viewpoint and there are many very fine publications reaching us from the United States. Erotic stuff, reaching high-school girls, however, has achieved such proportions in this country that action of some sort is surely justified.

Aside from any moral considerations, some of this material is of such poor literary quality that there is no excuse for reading it, no matter how broadminded one's viewpoint may be. I think you will find every Canadian author and critic unanimous in supporting you and I shall bring the matter to the attention of our branch of the Canadian Authors' Association.

With every good wish, believe me,

Very sincerely yours,
HOPKINS MOORHOUSE.

Editor,
PUBLIC HEALTH JOURNAL,

Dear Sir—

I have read the Editorial "It is Time to Act" relating to the miserable and lascivious literature introduced into this country from the States. It is a curse there as well as here; and is so regarded by those who know.

It may be impossible for the U.S. to handle their home problem; it surely cannot be impossible for us to prevent their troubles from crossing the line. There may be honest defenders of liquor, even of bootlegging—but there can be no defenders of this kind of material, other than those commercially interested. I shall certainly do all that is possible to aid in the exclusion of such literature.

With kindest regards.

Very sincerely yours,

H. W. Hill,
Public Health Institute,
London, Ont.

News Notes

The Dominion Council of Health meets in Ottawa on December 11th, 12th and 13th.

The Annual meeting of the Canadian Social Hygiene Council will be held in Ottawa on December 10th and 11th.

The Toronto Red Cross Society have raised over $65,000.00 for the Japanese Relief Fund to date. This is indeed interesting in face of the fact that many people are under the impression that the Red Cross Society is no longer functioning. The Toronto Red Cross Society contributes between $14,000.00 and $15,000.00 a year to the Christie Street Hospital besides contributing a considerable amount to the work of the D.S.C.R. in providing milk, butter and eggs, etc., to returned soldiers.

Dr. Oscar Klotz, Professor of Pathology, who has recently been appointed to the staff of the University of Toronto, delivered an interesting address at the Academy of Medicine, Toronto, on November 6th on "Medicine in Brazil".

Dr. J. J. R. Macleod, M.B., Ch.B., D.P.H., F.R.S.C., F.R.S., Professor of Physiology, University of Toronto, was the guest of honor at a banquet tendered him on the occasion of his return from Edinburgh where he delivered the Cameron Lectures in Physiology. The 70 guests represented the Medical Profession from different parts of the Province. Among those at the head table were Sir Robert Falconer, Drs. R. T. Noble, H. B. Anderson, J. A. Temple, F. L. Grasett, Adam Wright, I. H. Cameron and Alexander McPhedran.

The Council of Directors of the International Union against Tuberculosis held its annual meeting in Paris on July 26th, 1923, at the headquarters of the League of Red Cross Societies. Twenty members of the Council from different countries met under the presidency of Dr. Dewez of Brussels.

Professor Leon Bernard, Secretary General, gave an account of the development of the Union since the Brussels conference. It was decided that the following questions should be placed on the agenda of the conference to be held at Lausanne in September, 1924:

(1) Relations between pregnancy and tuberculosis. To be reported on by Prof. Forssner (Stockholm).

(2) Do there exist naturally or can there be produced artificially saprophytic forms of Koch's bacillus which might become virulent tuberculosis bacilli? Report by Prof. Calmette (Paris).

(3) Effects of the organization of the anti-tuberculosis campaign in different countries on the decrease in tuberculosis mortality. Report by Sir Robert Philip (Edinburgh).

The report of Prof. Bosançon (Paris) on the question of the "respective value of techniques for research of Koch's bacillus for diagnosis of lesions in human tuberculosis" gave rise to an interesting discussion. This report will appear in the next number of the Bulletin of the International Union against Tuberculosis.

The Provincial Board of Health of Ontario

Communicable Diseases Reported for the Province for the Month of October, 1923

COMPARATIVE TABLE.

Diseases	1923 Cases	1923 Deaths	1922 Cases	1922 Deaths
Cerebro-Spinal Meningitis	....	....	4	4
Chancroid	4	....	2	....
Chicken Pox	196	....	*....	....
Diphtheria	286	13	395	40
Dysentery	6	2	*....	....
Encephalitis Lethargica	3	3	*....	....
Gonorrhoea	242	....	170	....
Influenza	22	9	....	....
German Measles	1	....	*....	....
Measles	208	....	166	....
Mumps	40	....	*....	....
Poliomyelitis (Acute Anterior)	....	....	38	2
Pneumonia	....	90	....	129
Scarlet Fever	517	8	369	5
Septic Sore Throat	4	....	*....	....
Smallpox	23	....	21	1
Syphilis	130	....	229	....
Tuberculosis	187	90	175	112
Typhoid	137	16	111	32
Whooping Cough	185	7	149	11
Goitre	4	3	*....	....

* Not reported in 1922.

Notes on Current Literature

(From the Health Information Service, Canadian Red Cross Society)

Health Habits

The instruction of school children in health habits and ideals. An address by Miss S. L. Jean of the American Child Health Association before the National Conference of Social Work, Washington, D.C. "Mother and Child", July 1923, page 291.

Maternal and Child Hygiene

New York State's plan for maternity, infancy and child hygiene as outlined by Florence McKay, M.D., Director, Bureau of Child Hygiene, New York State Department of Health. "Public Health", Michigan, July 1923, page 267.

Child Hygiene in Toronto

Dr. A. Grant Fleming describes the activities of the Toronto Department of Public Health in prenatal care, infant and child hygiene. The Public Health Journal, Toronto, July 1923, page 291.

Child Hygiene in New York City

The Bulletin of the New York City Department of Health for June 1923 reviews the work of the Bureau of Child Hygiene during 1922.

School Medical Inspection

The technique and results of school medical inspection. "Mother and Child", July 1923, page 315.

Health for School Children

A report of the Advisory Committee on Health education of the National Child Health Council.

Health of School Children

An address by the Director of Public Health, University of Michigan, before the American Medical Association, on constructive health activities in the public schools. "The Journal of the American Medical Association", August 4th, page 378.

Mouth Hygiene for School Children

By Alfred C. Fones, D.D.S., Director, Division of Dental Hygiene, Board of Education, Bridgeport, Conn. "Mother and Child", August 1923, page 339.

Social Hygiene

The American Social Hygiene Association has recently issued two pamphlets on community education in social hygiene. One pamphlet deals with principles and the other with methods of organization.

Malnutrition

A paper read by Beatrice Woodward, R.N., before the Nurses' Annual Convention at Santa Barbara, 1923, on the causes, effects, and some of the remedies of malnutrition. "The Pacific Coast Journal of Nursing", August 1923, page 488.

Expenditures of Health Departments

Section 11 from the forthcoming report of the Committee on Municipal Health Department Practice, of the American Public Health Association. "American Journal of Public Health", June 1923.

The Work of the Ministry of Health

A review of the work of the Ministry, by Mr. Neville Chamberlain, British Minister of Health. "The Medical Officer", July 7th, 1923, page 5.

Canadian Red Cross Society Report

Annual report of the Executive Committee and Review of Activities of Provincial Divisions for the year 1922.

American Red Cross Pamphlets

The American Red Cross have recently issued revisions of the following pamphlets, copies of which may be obtained upon application to the Canadian Red Cross Society:

Information for Nurses Concerning the Red Cross Public Health Nursing Service.

Nursing Equipment for American Red Cross Public Health Nurses.

First Aid Instruction.

Red Cross Manual for Home Nursing Classes

A manual for home nursing classes has recently been issued by the Canadian Red Cross Society. Copies may be obtained from the Executive Officers of Provincial Divisions. Price 25 cents

Book Reviews

Rest and Other Things, a Little Book of Plain Talks on Tuberculosis Problems, by Allen K. Krause, A.M., M.D., Associate Professor of Medicine, Johns Hopkins University and Director Dows Tuberculosis Research Fund, Johns Hopkins University. Small 8vo, 159 pages. Williams and Wilkins Company, Baltimore, 1923. Price $1.60.

This handy publication by Professor Krause is composed of 8 addresses given at various times by the author. They are not technical but such as a layman might read and enjoy. They are nevertheless full of valuable teaching and much wisdom.

The value of rest as compared with any other form of treatment is emphasized in the first two essays. The problem of the infection of children and the mode of entrance is not dealt with. The remainder of the book is given up to general tuberculosis problems. This part should be read by every medical man. It will give a very enjoyable and profitable evening.

How We Resist Disease, by Jean Broadhurst, Ph.D., Assistant Professor of Biology, Teachers' College, Columbia University. 248 pages, 138 illustrations and 4 color plates. J. B. Lippincott Company, Philadelphia and London.

This book marks a new addition to the list of Lippincott's nursing manuals and promises to be of exceptional value in the elucidation of this rather technical subject of resistance and immunity. The aim of the book is to put into fairly simple language the main principles underlying this extensive subject, avoiding, as far as possible, lengthy descriptions of processes, reactions, etc., and especially detailed descriptions of technique involved. This is particularly noticeable in the chapter dealing with the Wassermann test, in the description of which many of the details of technique have been omitted, while the general principles involved are clearly illustrated by numerous diagrams and the simple language of the text.

An interesting feature is the listing of a series of suggested questions for study at the end of each chapter. Some of these questions partake of the nature of a review of the chapter, while others deal with related topics which would require consulting other more advanced works on the subject, and are especially adapted for those students who wish to pursue their study still further.

I. H. E.

Editorial

A NEW REPORT ON VENEREAL DISEASES

Elsewhere in this issue reference is made to a report on the Diagnosis and Treatment of Venereal Disease, compiled by the Medical Committee of the Canadian Social Hygiene Council, acting under the Chairmanship of Dr. E. E. King of Toronto, and issued by the Dominion Department of Health. The report is the result of the labours of a large committee of physicians and represents an attempt to put into easily accessible form a great deal of information about many aspects of the Venereal Diseases. The report, a copy of which has been forwarded to each physician in the Dominion, will fill an obvious need and should be of great value not only in clinics but to the average physician who will find in this unique brochure the answer to many questions which come up every day in connection with the medical control of Venereal Diseases. Both the Dominion Department of Health and the Canadian Social Hygiene Council are to be congratulated on this piece of work.

PERNICIOUS LITERATURE

In this issue there appear a number of letters dealing with the question of objectionable literature on sale in Canadian news stands. The editorial below is reprinted from the *Social Hygiene Journal*. It is gratifying to know that both in the United States and Canada there is a feeling that strenuous action should be undertaken to eliminate the literary scavengers and filth mongers from our news stands. Further correspondence and suggestions from our readers will be welcomed.

"Several recent periodicals have called attention to the passing of the dime novel,—the lurid-covered 'Dead-eye Dick,' 'Nick Carter,' and 'Jesse James' thrillers which in former days, when concealed in the pages of a geography, distracted many a boy's thoughts from the boundaries of Peru or the heights of Mt. Himalaya. Perhaps their influence was not of the best but it seems doubtful that it could be as pernicious as that of many of the present-day crop of tawdry and vicious short-story magazines which are displayed on the news stands.

" 'Once again Dick's trusty revolver blazed forth; six more redskins bit the dust!' Not exactly the finest sort of literature for a growing boy, but was it as harmful as the sex-steeped, aphrodisiac, poorly-written rubbish which may be found to-day within the covers of the type of magazine classed as 'spicy'?

"The steady increase in the number of such publications indicates that

a profitable clientele exists for them, and many observers have noted the widespread distribution of these magazines among young and impressionable boys and girls. Their stories, unsound in logic and unreal in structure, often glorify sex promiscuity and picture the rewards of vice as of far greater value than those of virtue. Chivalry and decency are dealt with as attributes to be derided; to be 'wise' is held up as the one most desirable goal, this 'wisdom' being defined as that of the libertine.

"Social-hygiene and other organizations looking toward public betterment are waking to the dangers of these publications. Both in the United States and Canada, parents, educators, religious leaders, and others of influence in their communities are meeting to discuss ways and means by which their publishers may be forced either to clean up or go out of business. The one best method probably is to make them unprofitable. Your newsdealer will not long continue to carry wares against which an important portion of his customers protest. You and your fellow townspeople would not purchase your roasts and chops from a butcher who carried tainted meat along with the good. Why not apply the same principle to your purchase of mental food?"

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The Fourth Maudsley Lecture

DELIVERED BY C. K. CLARKE, M.D., LL.D.,

Professor of Psychiatry, University of Toronto, Canada; Medical Director of the Canadian National Committee for Mental Hygiene,

At the Quarterly Meeting of the Medico-Psychological Association of Great Britain and Ireland, held at the House of the Royal Society of Medicine on Thursday, May 24, 1923.

THE gracious act of the British Medico-Psychological Association in asking me to deliver the Maudsley Lecture for 1923 is thoroughly appreciated, not only by myself, but also by the medical profession of Canada, showing as it does a further development of the relationship steadily increasing between the Mother Country and the Dominions, I shall not say Colonies, as this term has long ago become unpopular with the rising generations beyond the seas. We feel that we occupy a modest place in the list of nations, we yield to none in our devotion to King and Country, and regard a United Empire as absolutely necessary in preserving the ideals essential for the highest development of the human race.

To speak to this audience is an honour, perhaps undeserved, but my excuse for accepting it must be that it will enable me to tell something of the progress, the aims and aspirations of Canadians in the care of the mentally handicapped. I have laboured in the psychiatric vineyard since 1874, beginning as clinical assistant in the Toronto Hospital for the Insane under Dr. Joseph Workman, whose name is inscribed on your rolls as an honorary member. Dr. Workman doubtless had one of the most brilliant minds Canadian medicine has known, and as a psychiatrist had few peers. He was content to be a pioneer in a new world, but his influence has lived and produced practical results of inestimable value. He was a good pathologist and research student until he died at a ripe old age.

In a developing country where population is sparse and territories enormous, it is almost inevitable that the cost of building and maintaining institutions necessary to care for the mentally ill was a heavy burden on a population lacking wealth, as so much had to be undertaken in a short

time. The wonder is that anything was accomplished. Then again, when it is remembered that the hosts of immigrants drifting from the old world, always contain an undue proportion of defectives and mentally diseased, looking to a *terra nova* to find a solution of their troubles, or being urged by solicitous and penurious relatives, to say nothing of promoters, to search for pastures new, it may be understood that our problem has been by no means a simple one.

Sometimes resentment is shown in Great Britain because we take exception to certain types of immigrants, and deport many individuals who wish to become citizens. Why not give them a chance it is said? Remember that the success of a nation depends almost entirely on the character of its population, and there is no reason why a young country should overburden itself with the weaklings of other nations. Indeed a reading of past history makes it abundantly plain that if we are to preserve the rugged qualities which have characterised our people in the past we shall scan the immigration coming across the seas very closely. It is a normal defence reaction. The work of the National Committee for Mental Hygiene takes us into every hole and corner of each province, and we know accurately what has been good and what bad, what we need, and what it is best to reject.

It is all very well for Rudyard Kipling and other enthusiasts to say that what Canada must do is to pump in the population. That is true, but at the same time it is necessary to put up the suction pipe in waters not polluted by defect, physical degeneracy, and social failure. Of course, it must be frankly admitted that our public men are at times greatly influenced by American ideals, and our politicians are following the footsteps of Uncle Sam closely, in the endeavour to rob Europe of its needy millions, with little attempt to sort out the types. Anthropology is not recognised as a science by these enthusiasts, and the history of the rise and fall of other nations is rarely suggested as a topic worthy of the study of the parliamentarian. He shouts from the housetops that we must have immigration—lots of it—little realising that the intelligent study of emigration, not immigration, is the most essential thing in Canada to-day. The United States long ago discovered that Canada as a whole was occupied by sturdy Nordic types who produced efficient and capable people, and to the descendants of these they extended a warm welcome, with the result that we have suffered enormously by the loss of many of our best. The story of the Canadian in the United States marks indelibly the fact that the kind of democracy we have developed has had little heed of the national tragedy it has seen enacted, without doing anything to prevent it. So called democracy, unfortunately, is not always directed by the same minority, but by the average, or below the average individuals. Canada

has not increased in population rapidly, simply because we have been bled white by the emigration of our best to the south, and those we have induced to take their places have not always measured up even to the average. If the immigration had been made up of hardy Nordic agriculturalists such as we had a hundred years ago all would have been well. Unfortunately, that is not what happened and apparently is not likely to happen again. The United States have learned their lesson, but realise that it is too late to profit by it. Their best thinkers feel that the damage has been done, and whatever their idealists injected into their original constitution, they are now convinced that all men are not born equal, and it is possible to scale down to a new depth rather than rise to a greater efficiency. Canada, though, is now entering an era when our greatest hope is in the importation of splendid Nordic types from the United States, and the movement of these people from the South to the North is becoming more and more extensive. They have succeeded in the South and are bringing their money to the North to take up the land we still have to give away.

Possibly child immigration needs more careful supervision than any other, as it so frequently includes physical and mental weaklings. Child immigration would be invaluable if of the right kind under rigid psychiatric inspection, as the children grow up in touch with our ways and of course adapt themselves easily, but if they are of the wrong kind, they simply add enormously to our burdens and troubles. To show you that the danger is real, let us scan accurate statistics regarding some 5,800 children referred for examination to a national mental hygiene psychiatrist. These were special cases, and 1,386 were mentally subnormal to such a degree that they were incapable of acquiring an ordinary school education. Of this group only 25 per cent. were Canadians, 33 per cent. were foreign born, and the remainder, children of recently arrived immigrants. Look what a burden this meant to a young country! In one clinic alone in a short time 107 girls and 24 boys of the most defective and degenerate types, brought by one child immigration society, have come before my notice. Nearly all of the girls were persistently immoral, the majority unmarried mothers, many earning a living on the streets, and altogether a serious menace to the health and happiness of the community. It is said, of course, that they had been residents of the country for some time before they went astray. The reply is, that a careful inspection before sending them, and a rigid sorting at the port of arrival would have weeded them out. To carry on the latter inspection is most difficult, but the point is that it should not be necessary.

The matter is merely spoken of to show you the other side of the picture and to prove that we are forced to be careful in the matter of immigration. However, this is a controversial subject, and is spoken of

merely because it is a burning psychiatric question that is not always clearly understood even by Canadians, who wish to look big and think in illusionary speculations worthy of the general paralytic.

That research should have fallen by the wayside is not to be wondered at, and that psychiatry as a subject should for many years have occupied only a subordinate position in the medical curricula of the universities was inevitable. The relations between general medicine and psychiatry have been anything but intimate, and, as a rule, provincial governmental control of institutions resulted in a lowering of standards, as well as the recognition of the policy labelled "to the victors belong the spoils." Superintendents of Canadian asylums have too often been politicians who received their reward not because of their psychiatric knowledge, but on account of their influence with the government in power. Their ambition commonly has been to acquire a sinecure with a modest stipend, and they have had little thought of the welfare of humanity. The results have, of course, been tragic in many instances.

We passed through the various stages which marked the trail of the self-educated psychiatrist all the world over, and only too often adopted the thousand and one classifications which emanated from the fertile imaginations of those exploiting them. It was not an unusual thing to find an enthusiast who had a new classification for every case he met—indeed history is now repeating itself along these lines—and a panacea for mental disease was discovered a dozen times a year. To-day it was meta-physical or pseudo-psychological—to-morrow, gynæcological for the women and something else for the men, and so on. Recoveries were rated all the way from 50 to 75 per cent. or more, all depending on the enthusiasm of the superintendent, but the greater the politician the more brilliant the result. Even pathological findings were not ignored, and some of the knockout blows administered to the localisation theory are fresh in the minds of those who heard them given. It goes without saying that most of the pathology was evolved in the fertile imaginations of those offering plausible theories as facts. Some of the political heads were men of brains, but on the whole the "spoils to the victor" theory destroyed hope of great progress.

On the other hand, it must be admitted that medical education ignored psychiatry to a great extent, and provided little or no instruction for the student. Of course no really ambitious young man cared to remain long in a service where the rewards were so few and political preferment the usual means of advancement—indeed the promising ones generally disappeared after a brief experience.

While governments continued to squander money lavishly, even extravagantly, on palatial buildings, the medical and nursing services were

almost invariably starved, and the majority of institutions struck the dead level calling for custodial care alone. In spite of this a few bright spots kept the feeble flame of hope alive in the breasts of those who wished for better things. The service compared favourably with that to be found in most of the United States, where the trail of the politician was to be found only too frequently.

With these handicaps in existence some notable things were done by the real enthusiasts. In London the non-restraint movement began under Dr. Bucke in 1881, was followed by Metcalf in Kingston, and occupational therapy was developed on a large scale at Rockwood, not only as a substitute for restraint but a promising addition to the routine treatment of some acute and many chronic cases of mental disease. The results were striking and nearly every patient at Rockwood was occupied daily. The occupations were many and the movement became widespread, attracting so much attention that the institution was regularly visited by American and English workers anxious to learn our methods. We never believed that a panacea for all the ills the mind is heir to had been found, but there was developed a most useful adjunct to the ordinary methods of treatment. To read some of the modern writers on vocational training and industrial pursuits in hospitals for the insane one could almost believe that these things were recent discoveries, and yet, in October, 1862, Dr. Jarvis, of Dorchester, Mass., read a remarkable article before the Association of Medical Superintendents of American Institutions for the Insane, entitled "Mechanical and other Employments for Patients in the British Lunatic Asylums."

This showed conclusively that in many of the British Asylums, occupational therapy (as it is now grandiloquently styled), was developed in a thorough manner. It proved that the experiment was carried on in Britain about 1840, or even earlier, and was continued with increasing confidence for many years.

The training of nurses was begun at Rockwood, Kingston, in 1886, and a small hospital built. It was one of the seven pioneers in America. A small psychopathic hospital, too, was established, but as it was without proper staff and equipment could not cope with the exigencies of the occasion.

In 1907, Ontario sent a Commission to Europe to investigate the management and development of psychiatric clinics, with the result that a report was drawn up recommending the building of such an institution in Toronto. The Hon. Mr. Hanna carried a vote in the legislature and plans were prepared, but a group of little Canadians, who feared that their personal glory might be dimmed, succeeded in blocking the scheme, and

it remained for the West to establish such a psychopathic hospital at Winnipeg, an institution that has justified itself a thousand times.

The West has proved progressive in psychiatry and has shown enterprise to a commendable extent, spent money freely and abolished abuses.

It is gratifying to know that under Dr. E. Ryan the work at Rockwood continued to progress, and at the present time conditions there are as near the ideal as possible in an institution under Provincial control. Rockwood being in a university centre (Queen's University), and alive to the necessities of the occasion will, under the influence of its Professor of Psychiatry, adopt the idea of co-operation between psychology and psychiatry, establish a psychopathic clinic, and develop research to the greatest extent possible. The modern trend is carefully followed, as it is at Whitby, where Dr. Forster, a skilled psychiatrist, rules, and in several centres both in the east and west. At Halifax, Nova Scotia, most interesting developments are taking place—at Winnipeg in Manitoba—Battleford, Saskatchewan—New Westminster, British Columbia, and several other centres where advanced ideas prevail.

After the failure of our psychiatric hospital scheme in Toronto, we felt that if the best interests of psychiatry were to be preserved, it would be well to fight for ideals, outside of a public service. It seemed, too, to be the moment to scan psychiatry from a new point of view, to lay the foundation for the broader teaching of students, and to educate public opinion along better lines. We established a psychiatric out-door clinic at the Toronto General Hospital, and interested every social agency in the city—Juvenile Court, Public Health Department, Police Department, Social Service Agencies of all kinds, school physicians and nurses, Immigration Departments, Industrial Homes and Schools, etc. In a short time we had the whole city working for us, and the clinic has become a powerful factor in the control of juvenile criminality and prostitution, as well as the education of the public to the modern attitude of medicine towards the prevention of evils which have been so manifest and yet difficult to deal with heretofore.

Always believing that psychiatry was too reluctant to admit that any good could come out of Nazareth, it was felt wise to interest the department of psychology in the University of Toronto in the problem of mental defect. Psychology was ranked as a sub-department of philosophy, and it did not seem possible to emancipate it from philisophy and physics. Eventually the tide turned and we succeeded in getting not only the co-operation of the psychologists, but their hearty backing, and a great deal of the measuring of intelligence of certain groups of children is being done by them in our Clinic. Psychology is coming into its own, and while the wave of excitement caused by the discovery that psychology has a part to take outside of abstruse speculation, has carried the hyper-enthusiasts

too far, yet the well balanced group, who always save such a situation, realise the true *role* psychology is to play in the future. No matter how much some psychiatrists may resent the claims of certain psychologists to divine inspiration along special lines of mental investigation, it must be remembered that psychiatry itself has a good many sins and failures to answer for. Even with all of the aid given by pathological and clinical investigation, as well as research, can we truthfully assert that psychiatry has kept pace with general medicine as a whole.

The fact that some criticism of psychology and the enthusiasms of psychologists is indulged in does not mean that the importance of psychology is not recognized, on the contrary it is believed that every psychiatrist should be thoroughly grounded in psychology and psychological methods. Now that psychology has been placed on a footing which makes it rank as a valuable contributor in the study of mental action and behaviour, its claims to recognition cannot be denied, and we should make use of everything it has to offer.

We had our outbursts of enthusiasm in certain circles over psychoanalysis, Freudian theories and sex problems *ad nauseam,* but it was when the war broke out the neo-psychiatrists, neuro-psychiatrists, near psychiatrists, psycho-neurologists, and psychological healers of all kinds, found themselves. They grew over night and the younger they were the more knowledge they claimed to possess. They made the discovery that the world had been waiting far too long for their arrival, and they must now make up for lost time. Shell shock was their particular fad, and as each performer recited his recoveries, quite oblivious of the truth that the other fellows who employed totally opposite methods of treatment had also a 100 per cent. of recoveries, the public stood in amazement at the miracles being performed, and wondered what psychiatry had been doing during all the centuries it had existed. Of course there were some *poseurs,* but many of the young men were self-deluded and, confounding cause with effect, really believed that they could set the whole topsy turvy world straight in a few weeks. Even yet the truth has not dawned on a moiety of perfectly honest observers.

Our experiences with "shell shock" were similar to your own, and when conscription came into force the cases became more and more common. Dr. Clarence B. Farrar and I saw the majority of the Canadian military cases committed to asylums, and in Military District No. 2, to which I was psychiatrist, there was ample opportunity to see how easy it was for inexperienced observers to fall into error and to claim to make discoveries that would have startled the world in an age when the casting out of devils was an every-day occurrence. It made more and more evident the fact that we must teach psychiatry thoroughly from a broader

standpoint, and it also demonstrated the truth that the psychological side of medicine must be cultivated as never before. Conscription in Canada bore heavily on groups of mental defectives and mildly insane young men who had found their niche in simple farm work or occupations of a routine nature, and the change resulting from the removal to a new environment requiring more mental agility than they possessed resulted in disaster after disaster.

Possibly, though the most valuable fact gleaned from the experience was the discovery that there are many mentally diseased and handicapped persons capable of becoming useful hewers of wood and drawers of water in communities where, in the past, many were too regularly institutionalised. It shows, too, that by a more intelligent study of industrial misfits and occupational wanderers, far more may be accomplished than was heretofore thought possible. It means a further linking up of psychology and psychiatry and the using of men trained along psychological lines as applied to vocational and industrial fitness. We have recognised this side in our mental hygiene experiences, and have used with advantage a well trained official in connection with the development of this part of the work.

Emancipation from asylum life soon makes it plain that the institution physician is living in a contracted sphere, because, after all, his medical association is largely with terminal cases; he sees nothing of the evolution of mental disease, particularly in childhood, and is out of touch, to a great extent, with general medicine. Heads of institutions are necessarily occupied to a great extent with administrative duties, and taking the world as a whole, staffs of the great majority of asylums are so small that research and study cannot be carried on in the best way possible. No wonder psychiatry has not progressed as it might have done, and if the mountebank often obtained a hearing, it was because he delivered a message apparently full of promise, while the honest man stuck to the truth. It is in a sense a pity that such things should be, and yet the disease carries the germs from which the anti-humbug serum will eventually be prepared.

The lesson to be learned here is that the public is really looking for the guidance we have denied it, and when in the past psychiatry has vouchsafed to respond to the request for further light, it has covered its message with a mass of scientific verbiage that no one without the pale could understand. In other words, the aloofness of psychiatrists shut up within the walls of custodial institutions, has simply added to the popular misconception of mental disease and given a mysterious tinge to something that should be much better understood by the man on the street. It is only by following such lines as this the amateur dispensers of auto-suggestion and so-called psycho-analysts of similar type can be kept within bounds.

When one thinks of the mass of magnificent work done clinically by those who have had time to study the brilliant pathological findings by such investigators as Mott and others, it is a matter of wonder that so little has been accomplished in the way of actual cure. We must frankly confess that the progress made is not what might have been expected. Experience proves that we have neglected the first principles of preventive medicine, and certainly since taking up the work of National Mental Hygiene, investigating thousands of school children all over Canada, and working in a large clinic, it is only too evident that the road to complete success—if such a road exist—is in the early prevention of mental disease.

Let me congratulate you on the establishment of a Mental Hygiene Association in Great Britain which, under favourable auspices, and with a brilliant and distinguished personnel at its head, should accomplish great things. We have had several years of experience with our own Association, and realise that it is the most powerful influence imaginable in placing advanced psychiatry and mental hygiene on a proper basis. We have learned that with this organisation at our backs it is possible to speak the truth without being subservient to those who are content to jog on in the old rut and are opposed to reform.

It is recognised by the people, when the facts are placed before them, that many of the methods of the past are simply the outcome of a hopeless and pessimistic attitude that accepts the curse of mental disease as an inevitable and incurable disaster, not far removed from the realm of criminality. Governments not only look to Mental Hygiene Committees for advice, but depend on them to outline and direct many public enterprises. It is true that while the better care of the insane was the inspirational motive of the work of Clifford W. Beers, who developed the original Mental Hygiene Committee in the United States, it has been found that this is only a small part of the work to be done. Psychiatry has never before had such an opportunity to prove its worth, or to show the reason why it should become a powerful factor in educating people to lead better and saner lives. Psychiatrists must no longer be mere custodians of people overtaken by a dire calamity, but aggressive leaders ready to show their mettle in a great cause.

It is abundantly plain that the greatest good psychiatry can do for humanity lies along the line of the proper teaching of mental hygiene in the way of prevention, or if necessary, early treatment. This is a complex requiring the minimum of psycho-analysis to elucidate.

More good has been done by the Mental Hygiene Movement in Canada in five years in the way of improving the care of the insane, the study of defectives, the education of public opinion to a realisation of the importance of these problems, than was accomplished in half a dozen decades

preceding that period. Of course the movement has its critics and detractors, but any one who has time to read the surveys made and learn of what has followed, must agree that not only has the result been satisfactory, but also realise that Mental Hygiene's usefulness will grow as time goes on.

To illustrate briefly what happens when the people are educated to understand the importance of certain things: a psychiatric clinic was established in Montreal and officered by the Canadian National Committee. The expense was borne by the Committee. Success attended the efforts of the trained workers from the beginning, a new point of view, both educative and practical was established with the result that the clinic has been taken over by the Federation of Charities who now finance it, and will be responsible for its further development. Already there is an outcry for an international organisation to afford opportunity for the different bodies in existence to compare notes, to co-operate in finding the best methods of dealing with the thousand and one new problems coming to view, and to keep the psychiatric workers, as we say in Canada, "on their toes." What an opportunity for research and philanthropy to show a practical altruism that will help the world solve many of the difficult questions of vice, criminality, defect and disease. Canada and the United States are already arm in arm on this question. I represent them in Great Britain, and hope it will be possible to carry back a message to the effect that we shall be permitted to associate in a conference with the older nations in an effort to make a distinct advance in the interests of humanity.

To look at this from a practical standpoint: Take an analysis of 3,442 cases under 16, met with in our clinic, and we learn that no less than 8 per cent. could definitely be classed as suffering from mental disease or so-called psychopathic inferiority. There was no doubt about the diagnosis. Some hair splitters would perhaps dismiss the evidence and take refuge under the term psychopathic in some cases, but would have difficulty in defining what they meant. Other theorists might maintain that malnutrition was the origin. Certainly a disturbed metabolism could be demonstrated in many and the malnutrition apparently was merely an accompaniment, not a cause of the psychosis. We may recognise the existence of well defined chronic disease and pathological conditions in mental diseases, but we are not always in a position to make clear the evolution and explain the why and wherefore. Psycho-genesis has not fully yet proved its case.

If we are honest, we must confess that psychiatry is merely at Alpha in its book of knowledge, and brilliant as has been the work done in pathology and clinical investigation by some of the best minds the world has known in the realm of science, can an increased recovery rate justify

us in saying that we have solved or even guessed at the causes of mental disease or indicate just how the law of prevention is to be applied?

Take the scrap-heap called dementia præcox. Experience during recent years leads one to believe that careful investigation carried on in schools, psychiatric clinics and juvenile courts, will demonstrate the fact that the victims of the psychosis may nearly always be detected at an early age. Whether they are doomed from birth, or even before it, is by no means certain, and it is most important to learn how much prevention can do to steer the patients clear of the tragedy ordinarily awaiting them. Whether it can do much or little has not yet been satisfactorily determined, but at all events it is apparent that biochemical problems, studies in metabolism, study in the endocrines, in fact a whole series of laboratory investigations along the most advanced lines are required. It may satisfy some to hitch their wagon to the psychological star when studying these cases, but much as the psychological element is to be considered, the realm of physical disease cannot be ignored.

Some of the younger group of enthusiasts who scoff at the influence of heredity, and who talk learnedly about environment as the cause of the majority of misfits, pooh-pooh the occurrence of dementia præcox at early age, and assert that nearly all of the children who show the symptoms of this disease clear up eventually. I wish that such were the truth, but unfortunately have seen too many cases during their developmental stage eventually decline into complete dementia; so am not carried away by optimistic theorising.

One is forced to the conclusion that we are not yet in a position to determine how much medicine may accomplish in the way of anticipating and preventing the occurrence of some of the most intractable of mental diseases.

Of course it will be pointed out that after all eugenics will do more than anything else to solve the problem, but no matter how wonderful eugenics appear in theory, as long as human nature remains as it is, the application of eugenics as taught by some ultra modern teachers will prove not only difficult, but impossible. Extreme methods invariably produce violent reactions, and it is a simple matter to acquire the label "crank" if enthusiasm interferes with the sentiment tradition has woven about marriage. It is difficult to steer between the Scylla of tradition and the Charybdis of eugenistic enthusiasm.

Continued next issue

The Social Service Council of London

REPORT OF THE PUBLIC HEALTH COMMITTEE ON REDUCTION OF INFANT MORTALITY IN LONDON

H. W. Hill, M.D., D.P.H., L.M.C.C., Dean of Faculty

Institute of Public Health. Convener.

THE first question to which we have sought an answer, from the figures on Infant Mortality in London, Canada, during the three years, 1920, 1921, 1922, is this—to what extent is the undoubted progressive diminution in the Infant Mortality rate in London during this three year period due to the activity, beginning in 1919, of the London Child Welfare Association work?

The second question we have put to the same figures is this—what effect could extension of the present Child Welfare work to cover all the babies in London, Canada, instead of the rather small number (about 1/5-1/6) at present handled, be counted on to still further reduce the Infant Mortality?

The third question, already partially answered in the report for 1920 is this—at what stage or stages in the babies career will such supervision as is given by the Child Welfare work produce the greatest reduction? Whether mere reduction or something more is required will be discussed.

Three years Infant Mortality in London, Canada

Table 1a

Births—with deaths to five years of age.

For year	Total births	Deaths at or before birth	Survivors of birth	Deaths under 1 year	Survivors of 1st year	Deaths in 2-5 years	Survivors of 5th year
1919	1250	58	1192	139	1053	—	
1920	1518	56	1462	152	1310	36	1274
1921	1536	74	1462	118	1344	32	1312
1922	1519	69	1450	95	1355	31	1324

Note 1. The increase in births of 1921 over those of 1920 is offset exactly by the increase of stillbirths so that the survivors of birth were exactly the same in each of these two years. The drop in births of 1922, below those of 1921, is partially offset by a drop in stillbirths, so that the

survivors of birth in all three years were nearly the same. The diminution in deaths of the survivors of birth under one year, from 1920 to 1922 therefore results in a similar increase in survivors of the first year, and as a drop in deaths after the first year up to the fifth occurs also, the survivors of the fifth year increase markedly.

Note 2. While the above gives comparisons of things reasonably comparable, it must be remembered that the deaths under 1 year for 1920 are not by any means all from the particular group of children born in 1920. Thus a child of 11 months of age, dying in mid-January, 1920, will be recorded as a death under 1 for 1920. Yet he obviously belongs to the group of 1919 births, since he must have been born about mid-February, 1919. But a child of 11 months of age, dying in mid-December, 1920, will also be recorded as a death under 1 in 1920; and of course he obviously belongs to the group of 1920 births, since he must have been born about mid-January, 1920.

Still more evident is it that children dying in 1922 at ages over 1 year may belong to groups of births from 1919 to 1916.

Note 3. Although the births and survivors as above shown present figures so close together as to make a mental grasp of their relationships rather easy, the above table may be reproduced on the basis of an equal number births each year, preserving the proportions in other respects right through. We might select any number of births as the standard, the first on the list, 1518, or 1000 or 100 or even 19672 (a figure picked at random). But convenience is obviously served by using 1000 births and in general all proportions in infant mortality work are expressed on this basis. A table thus constructed follows.

Table 1b

For year	Total births (hypothetical)	Deaths at or before birth	Survivors of birth	Deaths under 1 year	Survivors of 1st year	Deaths in 2 - 5 years	Survivors of 5th year
1920	1000	36.9	963.1	100.1	863.	23.7	839.3
1921	1000	48.2	951.8	76.8	875	20.8	854.2
1922	1000	45.4	954.1	62.5	891.1	20.5	871.4

This indicates that for every 1000 births (i.e. children of seven months or more of intra-uterine age), 3 to 5 per cent. are likely to be stillborn, i.e. actually dead as they leave the uterus or dying without taking a breath. Those born alive whether at full term or premature (between the 7th and 9th month of pregnancy), now will probably die to the extent of 6 or 7 per cent. of the original 1000, before they are one year old. Those left

alive at the end of the first year now constitute about 89 to 90 per cent. of the original 1000; and now will probably die to the extent of 2 per cent. of the original 1000. Thus about 87 per cent. of the original 1000 survive 5 years after birth. According to the estimates of Dr. Wallace Crawford, Medical Missionary to West China and a D.P.H. of the University of Western Ontario, the Chinese mortality of children is about 87 per cent. of the births. Thus our figures are approximately the converse—we have 87 per cent. survive, where the Chinese have 87 per cent. die. Hence, for 1920 $\frac{152}{1462}$ is the Infant Mortality which is, as a fraction, $\frac{76}{731}$; or as per 100 (percentage) 10.4; or as per 1000, 104. An Infant Mortality Rate then is any figure which expresses the proportion between these two, the live births (in a given area in any one year) and the deaths under 1 year for the same area and year. The official Infant Mortality rate is that particular figure which expresses this proportion, *per 1000 live births,* i.e. it is 104.

This figure may equally well be derived from Table 1b. Here Table 1b, column 3, shows the survivors per 1000 of total births; Table 1b, column 4, the deaths under 1 year per 1000 total births. But the Infant Mortality Rate is the figure representing the deaths under one year *per 1000 live births,* i.e. per 1000 survivors of birth, or per 1000 births, excluding stillbirths. Table 1b, column 4, shows, for 1920, 100.1 deaths from 963.1 survivors of birth or live births or births excluding stillbirths. Thus $= \frac{100.1}{963.1}$ is the ratio of these to each other, which is (nearly) $\frac{13}{25}$ or 10.4 per cent. or 104 per 1000.

Table 1c

London Infant Mortality Rate

For year	Survivors of birth	Deaths under 1 year	Deaths under 1 year, per 1000 live births
1920	1462	152	104.0
1921	1462	118	80.7
1922	1450	95	65.5

Note.—None of the figures given in Tables 1a or 1b constitute the actual Infant Mortality Rate, although they furnish the data for it. This official Infant Mortality Rate is not based on the *total births,* as shown in Table 1a, col. 1, but upon the survivors of birth (Table 1a, col. 3). Against these are calculated not the total deaths in 5 years (Table 1a, col. 6) but only those in the first year (Table 1a, col. 4). Hence to calculate the official Infant Mortality Rate, for say 1920, we take the figures of Table 1a, col. 3, 1462, i.e. the *births, excluding stillbirths.* Note that these *live births* include *premature* live births as well as *full term*

births. Then we take the *deaths under one year, excluding stillbirths,* (Table 1a, col. 4), and discover the ratio between these deaths and the live births, expressing the ratio as a fraction, percentage or per 1000. Note also that the *specific infant death rate,* may easily be interpreted literally to mean exactly the same thing as the *official Infant Mortality Rate*: but the former term is really used technically to mean a quite different figure, the deaths under 1 year, of those surviving birth, expressed as a ratio, not of the live-births, but of the whole population for the same year and area, and usually is shown by a figure representing the deaths per 1000 of this population; in London 60,000. Thus for 1920, the official Infant Mortality Rate is, as above indicated $\frac{152}{1462}$; or 10.4 per cent. or 104 per 1000 *of the live births* but the *specific infant death rate* is $\frac{152}{60,000}$ = (nearly) $\frac{1}{400}$ or .25 per cent. or 2.5 per 1000 *of the whole population.*

Note.—It is evident that there are always two primary factors affecting the Official Infant Mortality Rate; the live-births, and the deaths of children under 1 year, excluding stillbirths. Obviously, a given number of such live births, combined with different numbers of such deaths will yield a corresponding variety of rates; an excellent example is seen in Table 1c where the live-births for 1920 and 1921 were the same; but the difference in the deaths for these years yielded a difference in the Official Infant Mortality Rate, these being 104 and 80.7 respectively. On the other hand a given number of deaths under 1 year, excluding stillbirths, combined with different numbers of births will also yield a corresponding variety of rates; thus Table 1c, 152 deaths in 1920, combined with the number of births that year (1518) yielded a rate of 104. But 152 deaths combined with a larger number of births would obviously yield a smaller Official Infant Mortality Rate. Thus, 152 deaths, with 1462 births $= \frac{152}{1462} =$ 104 Official Infant Mortality Rate; but 152 deaths, with 2320 births $= \frac{152}{2320} =$ 65.5 Official Infant Mortality Rate; the same as the Official Infant Mortality Rate for 1922; while 152 deaths, with 1000 births $= \frac{152}{1000} =$ 152 Official Infant Mortality Rate. Now, statistics are necessarily dependent for the accuracy of such rates on the accuracy of the component factors of the rate, in this instance, on the accuracy of the reporting of the births and deaths.

Deaths are more likely to be reported than births; the dead child's body must be disposed of, and the laws relating to undertakers, sextons, etc., make it difficult, at least in the larger centres, to secure interment without a report of the death. Hence the total deaths as reported probably approximate fairly closely the total deaths that occur; especially the full term births; prematures are less likely to be reported, either as births or deaths; and prematures of less than 7 months intra-uterine age are

probably seldom reported at all, usually being classed as abortions up to the fourth month (?), miscarriages between the fourth and the seventh months. But although the deaths after 7 months of intra-uterine age are thus reported fairly well, there is good reason to believe that illegitimate births are naturally concealed when and as long as this is possible; but even legitimate births are not recorded, from mere thoughtlessness. Thus in Duluth, a campaign amongst club women some years ago for better reporting of births, conducted on patriotic grounds, resulted in finding by one of the leaders, a physician's wife, that her own last baby was not on the records at all! In some places in Ontario the non-reporting of cases is believed to be as much as ten to fifteen per cent. of the total. It is easy to see that this shortage in birth-reports, combined with the practically full death reports, gives an Official Infant Mortality Rate higher than the facts. Thus, although in 1922, the Official Infant Mortality Rate on the face of the returns is $\frac{95}{1450} = 65.5$, yet if the births are reported 10 to 15 per cent. too low, i.e. should be, not 1450 live births but $\frac{100}{90}$ to $\frac{100}{85}$ of 1450 or from about 1610 to 1700 live births, then the Official Infant Mortality Rate will then be, not $\frac{95}{1450} = 65.5$ but $\frac{95}{1610} = 59$; or $\frac{95}{1700} = 55.9$. In the competition amongst cities for a low Official Infant Mortality Rate, the temptation to allow a fair estimate of unreported births to be added to those reported is occasionally yielded to—and, *if the Official Infant Mortality Rate is frankly described as thus obtained,* is defensible in the interests of bringing out the real facts. But on the other hand if this practice were generally indulged in, the temptation ofo each city to treat itself generously in its "estimates," with the object of cutting down its Official Infant Mortality Rate would lead to farcial exploitation of such rates and total and deserved loss of confidence in all such figures. Hence the Official Infant Mortality Rate should never be based on any but *reported live-births* and *reported deaths* under 1 year, for the same area and time. Any other calculation is perfectly open to the statistician, but should be designated clearly as exactly what it is or is not, in order to prevent mistakes intentional or otherwise.

Note.—Since total births are discounted by the stillbirths, and the total deaths under 1 year are discounted by the same figure, the larger the number of stillbirths, the lower the Official Infant Mortality Rate for the same total births, other things being equal. Thus (Table 1a) the total births in 1920 were 1518, the still births 56, the net live births 1462. Now the total deaths were these same 56 still births or deadborn children, plus the 152 deaths of the live-born children, or 208. The Official Infant Mortality Rate is obtained as already shown by excluding the still births from both total births and total deaths. Thus 1518—56=1462; 208—56

$=152$ and $\frac{152}{1462}=$ 104. It were shown that while the totals (1518 and 208) were correct that certain births, say 14, recorded as live births were really stillbirths, then the Official Infant Mortality Rate would be correctly calculated on the basis of 1518—70=1448 live births instead of 1462, and the deaths of live born children on the basis of 208—70=138, instead of 152. Making the Official Infant Mortality Rate $\frac{138}{1448}$ instead of $\frac{152}{1462}$, the former evidently being the smaller; these compare as 95.3 and 104. Thus it is essential to a reliable Official Infant Mortality Rate that not only the births and deaths but also that still births be correctly differentiated from live-births, the importance of the differentiation increasing as the total deaths decrease. Thus in a small community having a total of 50 births and a total of 5 deaths, if one of the latter is a stillborn, the Official Infant Mortality Rate is $\frac{4}{49}=81.7$, but if two of the five are stillborns the Official Infant Mortality $=\frac{3}{48}=62.5$. Thus for a given *total births* and *total deaths*, "the more the still births the less the Official Infant Mortality Rate"; and "the less the still births, the higher the Official Infant Mortality Rate." Some cities years ago counted all children who died within two weeks as stillbirths, instead of counting as is the rule now, i.e. stillbirths are those children only who fail to breathe, even once. Such a city was able to present an Official Infant Mortality Rate much lower than the present ruling would permit. Thus in 1922, the total births were 1519, the stillbirths (under present rules) 69, the total deaths 164. Hence the live births were 1450, the deaths under 1, excluding stillbirths, were 95, and the Official Infant Mortality Rate was $\frac{95}{1450}=65.5$.

Under the old ruling, however, and taking stillbirths as including children dying during the first week only, instead of the first two weeks as was sometimes the case, the Official Infant Mortality Rate would have been as follows: total births, 1518; stillbirths under present ruling, 69; additional stillbirths under old ruling, (now counted as deaths in the first week) 37; total stillbirths $=106$; hence total live births $=1412$; total deaths 164—106=58; $\frac{58}{1412}=41.7$.

If anyone fails to see why subtracting the same figure from the total births so alters the relations of the remainders to each other, he should reflect that in subtracting say 69 stillbirths from 1518 births one is only removing about 1/22 of the total births; but in subtracting 69 stillbirths from 164 total deaths, one is removing more than one-third of the total deaths. Since the portions removed and hence the portions remaining are not equal fractions of the amounts from which they are respectively taken, they cannot preserve to each other the relations of the original amounts.

Three years Infant Mortality in London

Incidence of Deaths—to 5 years of age

Table 2a

For year	Total deaths in first 5 years after birth (including stillbirths)	Stillbirths (including premature stillbirths)	Surviving birth	Deaths (including prematures) during 1st month of life (excluding stillbirths)	Surviving first month	Deaths in 2nd to 12th month	Surviving first year	Deaths in 2nd to 5th year
1920	244	56	188	76	112	76	36	36
1921	224	74	150	57	93	61	32	32
1922	195	69	126	53	73	42	31	31

Note.—This table indicates the concentration of deaths towards the beginning of infantile life; it shows that most of the deaths occur promptly and early. This tendency is less well marked in 1920 than in 1921 and 1922.

For 1922 the following table brings out rather trenchantly the same point.

Table 2b

For year	Probable miscarriages* (estimated)	Stillbirths	Deaths first week	Deaths 2nd to 4th weeks	Deaths 2nd month	Deaths 3rd month
1922	138	69	37	16	7	3
Proportions (approximate)	32	16	8	4	2	1

Causes of Stillbirths

For year	Total stillbirths	Causes not given	"Prematurity"	A prenatal cause (other than prematurity)	A natal cause
1920	56	56	—		
1921	74	52	15	5	2
1922	69	48	11	6	4

Tables 2a and 2b bring out emphatically that loss of infant life occurs *very early* in infant life. The *causes* of such losses necessarily precede the loss itself, sometimes by a considerable period. Concerning this miscarriage, the causes cannot be given from official municipal records, since the miscarriages are not recorded at all, much less their causes.

The first item which we can deal with therefore in municipal statistics (as distinguished from hospital statistics) are the stillbirths. These are recorded as to number and occasionally as to specific cause, as shown in

*Morgan of Toronto estimates loss of infant life through miscarriages as about double that through stillbirths.

Table 2c. These records of cause as given here are of little final value in detail, for the majority of the stillbirths have no cause whatever assigned. However, from their very value, deaths of infants in miscarriage and stillbirths must have either a prenatal or a natal cause, the former probably preponderating, although the latter is a *by-no-means* negligible factor. For 1922 we are able to offer specific causes for the six stillbirths given as due to a prenatal cause other than prematurity (Table 2c, col. 4) and for the four stillborths given as due to a natal cause (Table 2c, col. 5) as follows:

Table 2d

Stillbirths. Prenatal causes—6

For year	Total stillbirths due to an assigned cause other than prematurity		Malformation	Placenta previa	Toxemia of pregnancy
1922	10	Male	1	1	0
		Female	3	0	0
		Sex not stated	0	0	1
			4	1	1

Natal causes—4

	Injury at birth	Abnormal presentation	Asphyxia
Male	1	1	1
Female	0	1	0
	1	2	1

Note.—4 other stillbirths were recorded as "died in utero," but this does not aid in differentiating the cause as prenatal or natal—much less is it a specific cause of death.

Stillbirths

For year		Total	Premature	Full term
1921	Male	38	8	30
	Female	34	6	28
	Sex not stated	2	1	1
		74	15	59

Table 2e

Total stillbirths by sex

For year		Total	Premature	Full term
1922	Male	38	5	33
	Female	30	6	24
	Sex not stated	1	0	1
		69	11	58

Note.—The figures for the above division of stillbirths in 1920 are not available. In 1921 it will be seen that the full term stillbirths were practically the same as in 1922; but the premature stillbirths were more numerous. In proportion to total births the comparative figures would be as follows:—

Table 2f

For year	Total stillbirths per 1000 total births	Premature S.B. per 1000 total births
1921	48.1	9.7
1922	45.4	7.2

This again points to the value of prenatal work; since some reduction in stillbirths would result from work directed against premature birth.

1920-21-22

Table 3a

Deaths of premature children

For year	Total premature births	Total prem. deaths	Prem. born dead; deaths	Prematurts born alive; deaths	Premature deaths in to prematurity
1920	?	?	?	30	?
1921	?	43	15	23	?
1922	?	29	11	18	?

Note.—Unfortunately no total of premature births was obtained for any of the three years. Hence we cannot give the deaths of prematures in proportion to the births of prematures. For 1920 we cannot give even the stillbirths amongst the prematures. It will be noted that a reduction of approximately ¼ occurred in total premature deaths, in the stillborn prematures, and in the deaths of the live born prematures. Prenatal work should in time reduce premature births and premature deaths almost to zero.

Table 3b

Intra uterine age of premature children.

1922 two 7½ months.

Intra uterine age of remaining twenty-eight—not given.

Table 3c

Length of life of live born prematures who died.

1922—Males 9. 1½ hrs.; 2 hrs.; 2½ hrs.; 3 hrs.; 5 hrs.; 9 hrs.; 9 hrs.; 1 day; 11 days.

Females 9. 4 hrs.; 1 day; 2 days; 5 days; 10 days; 10 days; 28 days; 6 wks.; 6½ mos.

Note.—Although the 18 live born prematures who died consisted of equal numbers of males and females, eight of the 9 boys died within 1 day of birth, while 7 of the nine girls survived for two days to 6½ months, although they died finally.

Causes of Premature Deaths

In only three cases, all in 1922, were causes other than prematurity given: these were as follows—asphyxia, 1 male, 5 hours; respiratory failure, 1 female, 1 day; debility, 1 female, 6 weeks. A premature child dies of *something,* as a full term child does, and the cause of death should be given for the one as for the other.

Table 4a

Chief causes of death under 1 year, other than stillbirths and deaths of prematures.

For year	Total deaths under five years excluding stillborns	Deaths under 1 year of prematures (excludin6 stillbirths)	Deaths under 1 year (excluding still births and prematures)	Deaths in 2nd to 5th years
1920	180	30	122	36
1921	150	28	90	32
1922	126	18	77	31

Table 4b

Classification of causes of death (excluding S.B. and prematures), by years.

For year	Deaths in	Total	Cause nutritional	Cause infectional	Cause not stated and miscellaneous (accident, etc.)
1920	1st yr.	122	27	41	54
	2nd yr.	20	0	17	3
	3rd yr.	7	0	7	0
	4th yr.	5	0	5	0
	5th yr.	4	0	4	0
		158	27	74	57

1921	1st yr.	90	12	39	39
	2nd yr.	10	0	9	1
	3rd yr.	6	0	5	1
	4th yr.	11	0	9	2
	5th yr.	5	0	3	2
		122	12	65	45
1922	1st yr.	77	6	36	35
	2nd yr.	8	0	8	0
	3rd yr.	15	1	12	2
	4th yr.	2	0	0	2
	5th yr.	6	0	4	2
		108	7	60	41

Note.—These tables bring out the immensely greater losses of the first year of life, as compared with any one or even all four of the remaining four years of the period "under 5."

Also very noticeable is the lowering of every item of the table from year to year. Also that deaths from nutritional causes are almost wholly confined to the first year of life, while infectional diseases are high in all years, accounting for most of the deaths after the first year of life.

Table 4c

Main items of Table 4b rearranged

First year of life

For year	Total deaths (excluding stillbirths and prem.)	Cause nutritional	Cause infectional	Cause not stated or miscellaneous
1920	122	27	41	54
1921	90	12	39	39
1922	77	6	36	35*

2nd to 5th year of life

1920	36	0	33	3
1921	32	0	26	6
1922	31	1	24	6

*Includes congenital 9 (8 died in 14 months, 1 in 4th month); icterous 3; hemmorhage 4 (all 4 died within two weeks); injury at birth 6 (all died within 9 days) and accident 1, in 4th month.

Table 4d

Same as 4c, on basis of 1000

For first year of life

For year	Total deaths (including stillbirths and prematures	Cause nutritional	Cause infectional	Cause not stated or miscellaneous
1920	1000	221.3	336.	442.6
1921	1000	133.3	433.3	433.3
1922	1000	77.8	467.5	454.5

Thus it seems that while deaths from nutritional causes have been cut down by about 40 per cent. each year as compared with the preceding year, infectional deaths amongst those who escape death from nutritional causes have actually increased *in proportion* to the total deaths, although the *actual number* of deaths is diminished. This emphasizes the point that the *great* strides in cutting the infant mortality in London has been in nutritional work; infections play a larger *part* than ever in the total deaths. They have been reduced in actual number but by no means in proportion to the reduction in deaths from the nutritional causes.

Table 4d

Same as 4c, on basis of 1000

For 2nd-5th years of life, inclusive

For year	Total deaths over 1 and under 5 years	Cause nutritional	Cause infectional	Caused not stated or miscellaneous
1920	1000	0	916.6	83.3
1921	1000	0	812.5	187.5
1922	1000	32.2	774.1	193.5

Table 5

Total deaths under 5 years classified by extra-uterine age at time of death.

First year by months

	Age unstated	Age none (still births)	1st mo.	2nd mo.	3rd mo.	4th mo.	5th mo.	6th mo.	7th mo.	8th mo.	9th mo.	10th mo.	11th mo.	12th mo.	Total
1920	3	56	76	12	8	8	14	5	6	4	5	3	4	4	208
1921	0	74	57	12	6	11	7	5	6	5	3	1	2	3	192
1922	0	69	53	7	3	7	5	2	6	2	5	2	2	1	164

Monthly gain or loss 1920, compared with 1922 = −13, +23, +5, +1, 9, +3, 0, +2, 0, +1, +2, +3, (+3 not stated, 1920) = net gain, 44.

Table 4e

Causes of death (excluding stillbirths and prematures) under 5 classified by months under 1 year, by years hereafter.

Definitely Nutritional	Total	Months of 1st year. 1	2	3	4	5	6	7	8	9	10	11	12	1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.
1920	27	6	5	5	2	4	2	2	1	0	0	0	0	27	0	0	0	0
1921	12	2	0	2	3	0	2	1	0	0	0	1	1	12	0	0	0	0
1922	6	1	2	0	2	0	1	0	0	0	0	0	0	6	0	1	0	0

Definitely Infectional*	Total	Months of first year. 1	2	3	4	5	6	7	8	9	10	11	12	1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.
1920	41	7	4	1	2	8	2	1	3	4	3	2	4	41	16	7	5	3
1921	39	4	5	2	8	3	3	4	4	1	1	1	2	39	9	5	9	3
1922	36	9	3	3	3	4	1	3	2	4	2	2	1	36	8	12	0	4

*Including intestinal infection.

Note.—Of the deaths in the 1st month of life, 76, 57, and 53 respectively for the years 1920, 1921, 1922, the first total includes 29 prematures; the second, 26 prematures; the third, 28 prematures.

In 1920 one premature died in the 4th month; included above.

In 1921 two prematures died in the 5th month; included above.

In 1922 one premature died in the 2nd month, one in the 7th month; included above.

2nd to 5th year by years

1	Total	2nd yr.	3rd yr.	4th yr.	5th yr.
1920	36	20	7	5	4
1921	32	10	6	11	5
1922	31	8	15	2	6

Answers to questions asked in the first paragraph.

The first question, to what extent may the work of the Child Welfare Association be credited with the notable reduction in the Official Infant Mortality Rate, is obviously to be answered that the direct gains are along the special line of endeavour of that Association, i.e., in nutritional work. The introduction, pushing and especially the *home visiting* and *supervision* of the feeding, the demonstration of the making up of prescribed formulae, the *carrying home* of the physician's thrust, the checking up through periodic weighing of the infant, etc., are the details in which this work has achieved its triumphs. Indirectly, upon the public and the profession itself, the effect of a demonstration that *it can be done,* has been almost as valuable. The idea that "well" babies may benefit as well as definitely "sick" babies by systematic supervision at the hands of painstaking and experienced experts is no longer "pooh-poohed." The "grandmotherly" or "neighbourly" advice of the backyard fence consultation is slowly becoming a thing of the past. Mothers coming for the first time in the early days of the clinics were almost always feeding their babies on proprietary preparations, alleging the advice of their physicians in some instances. To-day, mothers coming even for the first time, *have not been using these foods* for their babies. Even backyard fence consultations more often take the line of advice to consult a physician or attend a clinic than as in the old days, to try somebody's patent food at random.

In two regards, however, the Child Welfare Association has made little impression—on troubles due to prenatal causes, and on infections. The stillbirths and the deaths of premature children maintain their high rates; and although deaths from infections have fallen off about 12 per cent., the reduction is *proportionately,* much less than in the case of deaths from ntritional causes, about 75 per cent. (See Tables 4a, b, c, d, e.)

Our figures shows Table 1a, that with an almost identical *total births* in 1920 and in 1922 (1518 and 1519 respectively) there were 45 more survivors of the first year in 1922 than in 1920 (1355 as compared with 1310). We know (Table 4f) that the deaths of prematures were reduced by 12, the nutritional deaths were reduced by 21 and the infectional deaths by 5; but on account of the large number of unstated and miscellaneous deaths it is hard to compare the two years any more minutely or to say just where the rest of the saving was. The monthly gains and losses are shown in Table 5. It will be noted that stillbirths were 13 more in 1922 than in 1920. This loss was much more than offset by a gain of 57 in the deaths under 1 year, i.e. by a net gain of 44, which with one birth more in 1922 than in 1921 gives a total of 45 more survivors.

The prenatal work of the Victorian Order must have a large share with the Child Welfare in the reduction of deaths from prenatal causes; but rather more than half of the reduction was doubtless in deaths from nutrtional causes, i.e. largely in the Child Welfare field.

Provincial Births, Deaths and Marriages
London

For year	Births Excl. stillbirths		Deaths under 1 excl. stillbirths	S.B.	Total deaths		Population
1911	999	(21.5 per M) (S.B. inc?)	100	55	725	(15.6)	46,300
1912	1091	(19.6)	128	67	670	(13.1)	50,860
1913	1203	(22.7)	146	53	854	(16.1)	52,940
1914	1200	(22.1)	111	45	802	(14.7)	54,220
1915	1185	(21.2)	150	63	837	(14.9)	55,860
1916	1284	(23.2)	173	58	932	(16.8)	55,240
1917	1100	(19.9)	111	58	918	(16.6)	55,130
1918	1188	(21.1)	125	45	1151	(20.4)	56,210
1919	1192	(20.9)	139	58	1011	(17.7)	56,860
1920	1476	(25.8)	148	56	1031	(18.0)	57,040
	11,918						
1921	1462		118	74			59,280
1922	1450		95	69			60,000

Incidence and Treatment of Venereal Disease in Ontario Reformatories

By Dr. A. L. McKay

ON the first of July, 1918, the Legislature Assembly of Ontario passed the Venereal Diseases Prevention Act, which has been the basis of the control and prevention of the spread of venereal diseases. The third clause of this Act had reference to the compulsory examination of all persons committed to any jail or reformatory in the Province for the discovery of venereal disease. In the event of these findings being positive, the Medical Officer of the Institution was required to isolate, treat and detain such persons until they were free from disease.

Soon after this the Division of Venereal Diseases of the Provincial Board of Health was formed to assist in the administration of this Act. Clinics for the treatment of these diseases were established at three of the Ontario Reformatories, viz., Fort William Industrial Farm, Burwash Industrial Farm and Mercer Reformatory for Females, all in the latter part of 1919. With the assistance of the Provincial Secretary's Department, up-to-date clinic rooms were provided of the latest approved type, and I think I can safely say the equipment and furnishings of these clinics are able to equal any of the hospital clinics in Ontario. In April, 1920, a similar clinic was opened at the Ontario Reformatory at Guelph which at that time was given over by the D.S.C.R. Similar clinics have also been opened at the Municipal Farm for Men and Women at Toronto.

A prisoner on admission to any one of these Institutions undergoes a complete physical examination by the physician of the Institution, and I cannot lose this opportunity of expressing the appreciation of the Division for the excellent work done by these physicians. In all cases a Wassermann test is made and smears taken of urethral discharge and cervical discharge in females. When any of those so examined are found suffering from gonorrhoea or syphilis they are isolated from the other prisoners, have separate dishes and lavatory accommodation, etc., and treatment is commenced.

Treatment is carried out along the standard lines. In the case of syphilis they are treated with arsenicals, mercury and potassium iodide in the plan as formerly carried out in the Army. The Provincial Board of Health manufactures their own arsenical, Phenarsenamine, which has proven of equal efficacy with any on the market. They also put out Mercury Salicylate for intramuscular injection. A course of six arsenic

is followed by ten mercury injections, one each week, and this is again repeated if the Wassermann is still positive. The work is carried out by Clinical Specialists from the Division of Venereal Diseases with the aid and co-operation of the physician at the Institution. In the case of gonorrhoea the treatment is by daily irrigations of potassium permanganate in men and cervical applications in the case of females. The gonorrhoea treatments at the Mercer Reformatory are carried out by a female physician and excellent results are being obtained. No prisoner is allowed to leave the Institution while in an infective stage, even if the sentence has expired. We have arbitrarily taken three full courses of syphilitic treatment to be sufficient, even if the blood still remains positive. However, these cases are referred to the Medical Officer of Health of the municipality in which they are going to live, with orders to report to him to continue their treatment. We have found that in the vast majority of cases they report to complete their treatment without further difficulty.

The Social Service Nurse of this Department interviews these prisoners and endeavours to locate contact cases which are also reported to the Medical Officer of Health of the municipality in which they reside for examination and treatment if necessary.

One would naturally expect to find amongst such individuals a high percentage of those who are diseased. The following are the figures compiled from three Institutions for the years 1921 and 1922:—

1. *Burwash Industrial Farm*

1920-21

Number of admissions	=	2607
Number of Positive Wass	=	219
% Positive cases	=	8.4%

1922

Number of admissions	=	746
Number of Positive Wass	=	90
Number of gonorrhoea cases	=	37
% Positive Syphilis	=	12.0%
% Positive G.C.	=	5%

2. *Guelph Reformatory*

1921

Number of admissions	=	927
Number of Positive Wass	=	99
Number of G.C. cases	=	77
% Positive Syphilis	=	10.6%
% Positive G.C.	=	8.3%

1922

Number of admissions	=	960
Number of Positive Wass.	=	78
Number of Positive G.C.	=	61
% Positive Syphilis	=	8.1%
% Positive G.C.	=	6.3%

3. *Mercer Reformatory*

1921

Number of admissions	=	173
Number of Positive Wass.	=	65
Number of Positive G.C.	=	45
% Positive Syphilis	=	38%
% Positive G.C.	=	26%

1922

Number of admissions	=	137
Number of Positive Wass.	=	48
Number of Positive G.C.	=	65
% Positive Syphilis	=	36
% Positive G.C.	=	47%

From these figures it is seen that 36% of the admissions at the Mercer are suffering from syphilis and 47% suffering from gonorrhoea. Among the men at Burwash and Guelph the figures are about 10% suffering from syphilis and approximately 6% suffering from gonorrhoea. These figures provide food for thought for those who have not yet realized the danger to the public of such girls as are confined in the Mercer Reformatory. The future course of conduct and the rehabilitation of these girls is a very real and pressing problem which must be met. Of course the high figures at the Mercer can be explained on the fact that the majority of the women are committed for sex offences.

The results we have obtained from our treatments are encouraging. At the Mercer Reformatory the results in the treatment of syphilis as evidenced by the Wassermann test were—Rendered negative = 54%; improved = 28%; unimproved = 18%. At the Guelph Reformatory the results were—Rendered negative = 33%; improved = 40%; unimproved = 27%. Similar results have been obtained at Burwash. The fact that about 20% show no improvement as evidenced by the Wassermann test may be explained by the fact that a great number of the inmates give a history of long past infection on admission, with little or no treatment, and they are consequently in the latent tertiary stage which is most difficult to treat as far as reducing the Wassermann reaction to negative.

In the case of gonorrhoea the results are good. No inmates are allowed to leave the Institution until they are at least rendered non-infectious and the vast majority are cured.

Now as to the value of this work in the public health program, I think we may demand our share. If we consider the Reformatory in the true sense of the word and not simply as a place of punishment and detention, the Province is aiding these people in a concrete way by returning them to civil life free from venereal disease. The prisoner is discharged feeling that a fresh start in life is not handicapped by the knowledge that he is still a menace to society in infecting others. And added to this is the fact that those who might in any way have been infected by the prisoner before his or her arrest, have been located and placed under treatment where necessary. In this way the circle is ever widening and effective work is being accomplished to control the spread of venereal diseases.

The Wassermann Reaction

By Dr. Joseph Gibbs, Vancouver, B.C.

THE object of this paper is to bring to your attention the absolute fallacy, not to mention the danger of the prevalent teaching that the Wass. test is a safe, if not absolute guide, to the the treatment of Syphilis.

I sincerely hope that the arguments brought forward will be sufficiently convincing that some definite action by this Association will be taken to warn the profession of the Dominion of the irreparable harm still being done as a result of the prevailing teaching on this subject.

With this object in view I purpose dealing with the subject roughly under five headings, as follows:—

1. Syphilis is no doubt the most formidable enemy the medical profession has to deal with, being as we understand it, the great killer of the race.

2. The Wass. reaction has been, and still is, the determining factor in treatment.

3. Our understanding of the Wass. reaction, to date, is purely speculative.

4. A speculative basis for the employment of such powerful drugs as As. Hg. and Bismuth, intravenously or otherwise, is a grave mistake and exceedingly dangerous.

5. It matters not what speculations may be indulged in regarding the Wass, reaction, the profound effects of 606 and its derivatives upon the organism are too far reaching and serious to allow of a continuance of the theory that a + Wass. means active syphilis and as such active treatment.

6. The only proper place for the use of the Wass. reaction is in the diagnosis, when symptoms are doubtful and then should be valued as only one letter is valued in the spelling of a word. Hg. K.I. or As. properly used, will even here give much more reliable information (therapeutic test).

After a diagnosis of syphilis has been made, the Wass. test as at present understood has no place in the further handling of the case.

Regarding No. 1, I think we are all sufficiently convinced of the importance of syphilis without indulging in any lengthy speculations and the terse saying of the late Sir Wm. Osler is amply sufficient for our needs,

viz:—"Know syphilis in all its clinical aspects and manifestations and all other things clinical will be added unto you."

Note especially the "all other things clinical."

The last five points are so intricately interlocked and interwoven that to treat with them as distinct sections and under these specific headings seems almost impossible. Therefore I mention them merely to call your attention to them as the salient points I shall endeavour to bring out.

The following table indicates the attitude of the medical mind as it relates to the government of the treatment of syphilis in the Army.

This table shows, under sub-heading "Disposition of Patient," that with the exception of VI. the Wass. is the guiding principle in the further handling of the case, and a Positive Wass. is responsible for instituting the 2nd Course. In other words, the result of the Wass. reaction was the determing factor in the treatment of Syphilis in the Army. The questions naturally arise—has this principle been carried over to civilian practice? Is it a rational principle? Who is responsible for it?

This interpretation and application of the Wass. reaction naturally existed in civil practice before the war, otherwise it would not have been reflected so strongly in the army work.

1. Has this principle been carried over to civilian practice?

The "United States Public Health Service" have a booklet issued entitled, "The Venereal Diseases," "An outline of their Management, prepared under the direction of the Surgeon General of the Army for the use of Medical Officers."

"Revised for use of Civilian Physicians."

In this booklet the U.S. Army treatment is outlined and adopted by the Public Health Service; and their treatment of Syphilis is undoubtedly governed by the Wass. reaction.

To be convinced, read the book.

Also read the literature from Great Britain and the same things will be noted.

Theirberg—"Syphilis in the Army"—ignores the Wass. excepting as an aid to diagnosis, which seems to be the prevailing attitude among the French.

Our Dominion Health Authorities, page 17, Publication No. 4, under sub-heading "Estimating the Course of Cases," have very wisely inserted the warning—"In Syphilis the treatment is directed to the patient not to the Wassermann reaction. The securing of a Wassermann reaction is not the essential point in treatment."

Great Britain and her Colonies, together with the United States, most decidedly were guided in the carry-on treatment of their soldier syphilitics by the results of the Wass. reaction. This was the result of previous

ACTIVE TREATMENT IN THE ARMY

1ST COURSE

Army No.	Time Required	606 and Substitutes	Hg.	Disposition of Patient	After treatment
I.	52 days	Diarsenol 3 grms.	8 grs. (8 injections)	Wass. Negative. Returned to Lines	None.
II.	63 days	Arsphenamine 2.8 grms. (7 injections)	8 grs.	Wass. Negative. Returned to Lines Wass. again in 3 months	None.
III.	46 days	Novarsenobillon 2.8 grms. (7 injections)	8 grs.	Wass. Negative. Discharged	None
IV.	46 days	Novarsenobillon 2.8 grms. (7 injections)	8 grs.	Wass. Negative. Discharged Called up for Wass. every 3 months	None
V.	57 days	606 2.6 grms. 914 3.9 grms.	8 grs.	Wass. Negative. Supervision monthly while at home	Advised to take Hyd. c. Creta if going overseas
VI.	18-24 days	Novarsenobillon 1.65 grms. (3 injections)	8 grs.	Wass. not considered	Protoiodide 4 pills per day

ACTIVE TREATMENT IN THE ARMY

2ND COURSE—WHEN WASS. IS POSITIVE AFTER 1ST COURSE

Army No.	Time Required	606 and Substitutes	Hg.	Disposition of Patient	After treatment
I.	31 days	1.5 grms. (3 injections)	6 grs.	Wass. Neg. Return weekly for 3 weeks Wass. Pos. Return weekly for 3 weeks 3 months rest Wass. Pos. end of 2 months	1st week K.I. Grs. X t.i.d. Hg. 1 gr. 2nd week K.I. Grs. XIX t.i.d. Hg. 1 gr. 3rd week K.I. Grs. 40 Hg. 1 gr. (2nd Course is repeated)
II.	42 days	1.7 grms. (4 injections)	4 grs.	Wass. Pos. at end of 3 months Repeat the course	None
III.	21 days	1.2 grms. (3 injections)	3 grs.	Wass. Negative—Discharge Wass. Positive—Discharge	Hg. Pills
IV.	21 days	1.2 grms. (3 injections)	3 grs.	Called up every 3 months for Wass.	None
V.	35 days	.7 grms. (2 injections)	3 grs.	Wass. Neg. take every 3 months	Advised to carry on at a later date with Hyd. c. Creta
VI.	NONE			Wass. ignored	Protoiodide continued

teaching. By whom? Naturally the teaching bodies of the Medical Schools. These teachers in turn have been carried away on the flood tides of the newest fad, the discovery of a panacea for all ills through the study of bacteriology, protozoology and serology.

The profession has allowed itself to be overawed by this latest mystery—"biological discoveries."

The average practitioner has so many other things to think of that he naturally trusts his learned brother scientists for a more or less reliable tip on the nature of the enemy weapons and the defence to be used against them. He, the practitioner, seems to be confused as to the natures of vaccine and antitoxin. His nebulous understanding naturally turns him to the Protozoologist and the Serologist for guidance in dealing with the S.P. and in his interpretation of the Wass. reaction, as he is anxious to know the sort of enemy he is dealing with and what effect this enemy is having upon the blood serum of his patient, i.e., what changes are taking place in the blood serum and what do these changes mean.

It would be impossible to quote from many of these specialists as it would be only vain repetition, as they all seem to quote from one another, as most of us generally do, seeing we are yet human; therefore, we will take but a few and confirm our evidence by reading say a few thousand other works by a few thousand other authors which we can add to our libraries, should we have the money, time and inclination.

Our man now comes to Craig for advice. Craig has done 50,000 Wassermanns and has written a book on the subject which is widely used, therefore he should know.

He says on page 34:—"The exact nature of the Wassermann reaction is still a mystery." Doubt No. 1 has been established.

Page 36:—"The most that can be said regarding the Wassermann reaction is that it is due to an interaction between lipotropic bodies present in the blood serum of syphilitics and lipoids in the antigenic extracts." No. 2.

Pages 203-4:—In discussing two theories he says:—"Neither theory has proved correct as we know nothing certain as to the actual cause of the Wassermann reaction." Doubt No. 3.

Our enquirer now knows Craig is not sure of the "actual cause"—whether a measure of living S.P., i.e., destruction, or antibody, i.e., protection.

Pages 171-2:—"A positive reaction, *as has been noted,* means the presence in the body of living treponemas, and as long as the reaction remains positive, just so long is the patient a victim of syphilitic infection, regardless of the occurrence of other symptoms of the disease."

Here our enquirer has a positive statement upon which to hinge his faith and this is the Joker in the pack. Let us examine "as has been noted."

Page 58:—"It may be accepted as proved that there exists in the blood of syphilitics, antibodies and lipotropic substances that are capable of fixing complement in the presence of a proper antigenic extract, and that these bodies depend for their origin on the presence in the body of living treponemas for *when the latter disappear from the lesion in experimental animals as the result of treatment the complement fixation reaction also disappears.*"

Now the complement fixation principle is a biological one, i.e., the result of a living process. A drug sufficiently active to destroy organisms, such as the S.P., would naturally be expected to destroy other living process, such as the complement fixation process evidently is, and numerous body cells receiving the brunt of the attack are no doubt also destroyed. This would be the natural conclusion after reviewing Harrison's 13 points and the P.M. findings (mentioned later), for if a drug can cause such profound effects on the sympathetic nervous system, it can so easily reduce the vitality or activity of vital processes to such an extent that a delicate biological process can be disturbed or annihilated. Small doses of alcohol evidently do the same thing. A drug that is bacteriotropic is no doubt also organotropic, i.e., if it will destroy the activity of a pathogenic organism such as the S.P. which possesses a protective covering, it will in all probability destroy much more easily and readily another biological process without any such protection. One would naturally expect just such a thing to happen. It does not follow that because both the S.P. and the Post. Wass. can be destroyed by the use of 606, that the one means the presence of the other. Living S.P. we know, can exist without the presence of a Positive Wassermann reaction and no doubt the opposite is true. We know that the opposite is true in other conditions. as we can and do get positive serum reactions after the use of vaccines (dead organisms), and that no living organisms are present—in fact, that is why we vaccinate, viz., in order to prevent the appearance and growth of living organisms in the human economy.

It seems to me his argument is too far fetched to be even considered, let alone to be quoted as a fact.

Page 196:—"The interpretation of the reaction when the test is used in the control of treatment."

"If the reaction is negative, monthly tests should be made in all cases possible. If it remains persistently negative, treatment should not be persisted in, but if there is any trace of inhibition beyond a weak plus

minus reaction, the treatment should be continued." Advice undoubtedly based on the supposition that a Positive Wass. means living S.P.

Page 197:—"Treatment in syphilis should never be discontinued until the Wass. test has become negative, unless it is found that the case is Wass. fast, i.e., that no amount of treatment will cause the reaction to become negative."

It is a pity that men inexperienced in the treatment of syphilis will allow themselves to make such palpably erroneous statements as this.

"Man's inhumanity to man makes countless thousands mourn."

Page 189:—"It will be evident from what has been said of the effect of treatment upon the positive reaction, that if scientifically used the efficacy of any form of treatment advocated for syphilis may be absolutely determined by employing the test as a control of treatment."

To Craig's everlasting credit he admits right here he is judging "the effect of treatment upon the positive reaction," and not upon the patient or the disease. He no doubt thinks that he is treating the Wass.—most real doctors treat their patient for his syphilis. If exhibitors at an exhibition judged their own stock the probability is that 100 per cent. of 1st prizes would be the result. When the Wass. measures the effect of treatment on the Wass. the 100 per cent. will still hold. The patient or the syphilis have no chance on earth of carrying off a prize. Bill Smith is a big man when judged by Bill Smith. The Wass. is a wonderful guide to treatment when judged by the Wass. "If I bear witness of myself my witness is not true."

As the result of teaching as the above, and the teacher's name is Legion—we have flashes of borrowed reflection from Laboratory workers, University Professors, Wise men from the East, etc., et al., through the medium of pamphlets, Medical Journals, Medical Books, Oratorical flights and what-not, whose stuff—and I use the word "stuff" advisedly—is being swallowed in toto by the profession at large, as the pill is small, easily swallowed, causes little or no trouble either mental or physical to the patient, (as all it requires is a 5cc syringe, or even one half of that size is sufficient), it naturally has become readily assimilated; and so we have the sorry spectacle of further reflection to the public, by patients not reporting for treatment because their blood was Neg. in the face of such quotations as those of Haegerty Symmers, Darlington and Bettenaw work where they found 31 to 56 per cent. an average of 43½ per cent. where the Wass. was Neg., showing characteristic syphilitic lesions at autopsy.

Then the Positive Wass. patient demanding injections of 606 until his blood becomes Neg. and if you should cast your pearls before swine and ask him if he wants his syphilis cured, or is he looking only for a cure of

his Wass.—he will almost invariably turn around and rend you with the remark that "everyone knows that a Positive Wass. means active syphilis" —in face of the fact that a most excellent man told the Victoria Medical Association that a patient may have a Pos. Wass. and still be cured of his syphilis.

This statement, by the way, naturally left our medical friends in a very unsettled state of mind, especially when he said further that other patients with a four plus are badly in need of further treatment.

If you try to disentangle this you might go "loco."

To help you out I will make two statements:

1st. No one knows what the Wass. is really a measure of.

2nd. No one knows when syphilis is cured.

If you, at any time, run across the genius who can answer these two questions, giving reasons for the faith that is in him, for goodness' sake, let me know, for he is the chap I have been looking for for years. He is not to be found in our Canadian or American Universities, and so far as I could gather he is still in secret hiding in the British Isles and the other overseas Dominions.

By the way, I have just been informed by a well educated, well trained, thoughtful Medical Graduate of most recent date, that the impression of the graduating medical students of a large Medical College is, that all that is required in the knowledge of syphilis is to be able to take blood and give 606 intravenously. If a case suspected of having syphilis returned a Negative Wass. no treatment for syphilis would be given—indicating that complete diagnostic reliance was placed on the Wass. reaction, and not only that, but that it is an absolute guide to treatment. God only knows what would happen the patient if the Wass. should be positive.

But what is the result of this form of teaching?

It can be only one thing, and the Serologist comes in again with his profound advice.

Continued next issue

Notes on Current Literature

(From the Health Information Service, Canadian Red Cross Society)

Health Talks

The Toronto Department of Health has recently issued a bulletin outlining health talks to school children and giving general information on communicable diseases.

Health Education of Very Young Children

An address by Edna White, Director of the Merrill-Palmer School, Detroit, before the International Health Education Conference, San Francisco, June, 1923. "The Public Health Nurse," October, 1923, page 527.

Hot School Lunches

A description of a simple and effective plan for the supply of hot lunches in a rural school. "The Public Health Nurse," October, 1923, page 502.

Weight—Height—Age Tables

Prepared by Bird T. Baldwin, Ph.D., and Thomas D. Wood, M.D., and published by the National Child Health Council, Washington.

List of Health Films

A list of health films has been prepared by the National Health Council of New York City. This list is most complete and will be of assistance to those considering the purchase of health films.

Vaccination Technique

The technique of vaccination and the system of certification carried out at the New York Quarantine Station. This system aims to prevent delay as well as protect againt smallpox. "Public Health Reports," United States Public Health Service, September 21st, 1923, page 2201.

Suggestions for Prenatal Nursing

"The Public Health Nurse," July, 1923, page 334.

Public Health in England

Report of the Chief Medical Officer of the British Ministry of Health for 1922.

American Red Cross Pamphlets

The American Red Cross has recently issued the following pamphlets, copies of which will be sent gratis upon application to the Canadian Red Cross Society:—

Life Saving Methods.

Report of Relief Activities in Pueblo, Colorado.

American Red Cross Museum.

ONTARIO

The Provincial Board of Health of Ontario

Communicable Diseases reported for the Province for the Month of November, 1923

COMPARATIVE TABLE

Diseases	Nov. 1923 Cases	Nov. 1923 Deaths	Nov. 1922 Cases	Nov. 1922 Deaths
Cerebro Spinal Meningitis	2	0	3	3
Chancroid	2	0	4	0
Chicken Pox	483	0	x0	0
Diphtheria	374	22	385	29
Encephalitis Lethargica	0	6	x0	0
Gonorrhoea	91	0	217	0
Influenza	0	7	0	0
Measles	293	0	235	0
Mumps	25	0	x0	0
Pneumonia	0	128	0	185
Poliomyelitis	1	0	10	1
Scarlet Fever	680	11	461	9
Septic Sore Throat	11	1	x0	0
Small Pox	58	0	76	0
Syphilis	187	0	147	0
Tuberculosis	116	58	156	84
Typhoid Fever	68	13	37	11
Whooping Cough	369	6	309	8
Goitre	2	1	x0	0

Note.—xNot reported in 1922.

John W. McCullough.

Editorial

PERNICIOUS LITERATURE

THE following resolution was passed at the Annual Meeting of the Canadian Social Hygiene Council:

"WHEREAS it has come to the attention of the Canadian Social Hygiene Council that an enormous amount of immoral and dangerous literature is being put in the hands of Canadians through our news stands.

AND WHEREAS, the influence of such literature is definitely prejudical to the moral welfare, health and happiness of the people and especially the young people of the country,

THEREFORE, be it resolved that the Canadian Social Hygiene Council at its Annual Meeting go on record as approving the adoption of every means of preventing such literature being circulated in Canada, also that all local branches of the Council be informed of this policy and the necessity for it, and urged to co-operate in every way.

ALSO, that the incoming Executive be asked to work out means for the effective elimination of such literature as far as possible."

This is another step in the right direction. It is hoped that readers of the PUBLIC HEALTH JOURNAL will investigate news stands in their own neighhbourhood and notify the JOURNAL as to steps which they feel should be taken. Further letters on the subject will be published from time to time.

News Notes

The Annual Meeting of the Canadian Social Hygiene Council held in Ottawa on December 10th and 11th was an unqualified success. The programme as carried out was as follows:

MONDAY, DECEMBER TENTH

Morning Programme

9.00 A.M.—Registration.
9.30 A.M.—Annual Meeting:
Presidential Address—Hon. Mr. Justice Riddell, Toronto.
Reports from Standing Committees.
Treasurer's Report.
General Secretary's Report.
Appointment of Standing Committees.
Appointment of General Resolutions Committee.
General Business.
12.00 A.M.—Election of Officers.
12.30 P.M.—Luncheon Meeting.
Combined General Executive and Business Executive.

Afternoon Programme

2.00 P.M.—"Social Hygiene." Dr. Gordon Bates, General Secretary, Canadian Social Hygiene Council.
Discussion led by Dr. W. F. Snow, New York.
2.30 P.M.—"Venereal Disease Mortality." Dr. J. Heurner Mullin, Hamilton.
Discussion to be led by Dr. George S. Strathy, Toronto. Asst. Medical Director, Canada Life Assurance Co., Toronto.
3.10 P.M.—"Venereal Disease and Marriage." Dr. George W. Ross, Toronto.
Discussion to be led by Dr. J. F. Argue, Ottawa.
3.50 P.M.—"The University and Its Relation to the Social Hygiene Movement." Prof. J. A. Dale, University of Toronto.
Discussion led by Dr. C. A. Dawson, McGill University, Montreal.
4.20 P.M.—"Modern Reading and Its Relation to Sex Morality." W. F. Harrison, Secretary, Magazine Publishers' Association of Canada.
Discussion led by Mrs. N. C. Smillie, Ottawa.

Evening Meeting—8.15 P.M.

This meeting held in the Auditorium of the Normal School.
Chairman—Right Honourable Sir George Foster.
Speakers:
Dr. John A. Amyot, Deputy Minister of Health for the Dominion.
Dr. W. F. Snow, General Secretary, American Social Hygiene Association.
Hon. Dr. Forbes Godfrey, Minister of Health for Ontario.
Mrs. E. Pankhurst, Toronto.

TUESDAY, DECEMBER ELEVENTH

9.00 A.M.—"The Work of a Local Social Hygiene ouncil." Miss Hazel Todd, Executive Secretary, Ottawa Social Hygiene Council.
Discussion led by Dr. Joseph Hunt, Provincial Board of Health, Ontario.
9.30 A.M.—"Labour and Its Relation to Social Hygiene." Capt. J. A. P. Haydon, Ottawa, Editor of the Canadian Congress Journal.
Discussion led by Prof. J. A. Dale, University of Toronto, Toronto.

10.00 A.M.—"Play in the Life of the Child." Dr. Bruce Macdonald, Principal, St. Andrew's College, Toronto.
Discussion led by W. E. Findlay, Montreal, President Amateur Athletic Union.
10.30 A.M.—"The Work of the Venereal Disease Committee in the Province of Quebec." Dr. A. H. Desloges, Montreal.
11.00 A.M.—"Social Hygiene Motor Tours." Mrs. R. A. Kennedy, Ottawa.
Discussion led by Mrs. Pankhurst.
11.30 A.M.—"A Clinic for Women and Children." Dr. Gerald H. Pearson, Ottawa.
Discussion led by Dr. Gordon Bates, General Secretary, Canadian Social Hygiene Council.
12.30 A.M.—Luncheon Meeting.
2.00 P.M.—"The Church and Social Hygiene." Brief papers by:
Rev. Canon Vernon, Toronto.
Rev. B. R. Brickner, Toronto.
Rev. Father , Ottawa.
3.15 P.M.—Report of Resolutions Committee.

The old Executive was re-elected with the following changes: Additional Vice-Presidents: Dr. W. C. Laidlaw, Edmonton; Hon. Dr. Forbes Godfrey, Toronto; Dr. H. E. Young, Victoria. The name of Mrs. E. Pankhurst, Toronto, was added to the Members of the Board and the name of Dr. I. H. Yeo, Charlottetown, was substituted for that of Dr. S. R. Jenkins as Provincial chairman for the Province of Prince Edward Island.

The Division of Industrial Hygiene, Provincial Board of Health, Ontario, has recently published a very complete compilation of the existing knowledge on lead poisoning. The danger of this poisoning has been recognized for many years in all the chief industrial countries, and an enormous amount of work has been done with a view to safeguarding workers. The precautions taken in Europe and England have resulted in very marked decrease both in the number of cases and the deaths resulting. In Canada far too little is known on the subject and very many cases of lead poisoning are never recognized as such, with the result that serious conditions are allowed to develop and means of keeping down the danger are not taken.

The Division's book should be of great value in showing the dangers, promoting correct diagnosis and pointing to the precautions which have been found effective elsewhere. Lead is exceedingly widely used, and it is clear that there is very great danger to the health of many workers unless precautions are taken.

Resolutions passed at the Annual Meeting of the Canadian Social Hygiene Council dealt with pernicious literature on news stands in Canada; the appointment of a Royal Commission to investigate the prevalence

and mortality arising from Venereal Disease; the necessity for supporting amateur athletics; measures to ensure the health of those entering marriage and the desirability of more active co-operation on the part of religious bodies in the Social Hygiene movement.

Communicable diseases among employees of Northern Ontario's great winter industries are becoming rare, the reason given by those responsible for this branch of the Public Health Service being the co-operative spirit which exists between the employees, the supervising physician and the officers of the Provincial Board of Health.

Provincial Sanitary Inspector Millar stationed at Fort William, Ontario, who has been a patient at the McKellar Hospital of that city, has now recovered and is back again in his office. Mr. Millar's disability is, we believe, a legacy from the Great War.

Dr. J. G. Fitzgerald, Professor of Hygiene in the University of Toronto, has been appointed a member of the International Health Board under the Rockefeller Foundation. Dr. Fitzgerald was born in Ontario and received his medical education in Toronto University. He pursued graduate studies in medicine at the Harvard Medical School, Pasteur Institute, Paris, and the University of Freiburg. From 1911 to 1913 he was Associate Professor of Bacteriology in the University of California. He has written many articles on medical subjects, particularly on bacteriology and immunology, and has published several volumes, including "Laboratory Guide in Bacteriology" (1911) and "Introduction to the Practice of Preventive Medicine" (1922). In 1914 he entered the Royal Army Medical Corps of Canada and saw service in France, attaining the rank of Major.

It is not generally known that in Ontario some 72 physicians are engaged in supervising sanitary conditions and caring for the health of employees in Ontario's great lumbering industry. Many of these physicians now specialize in this branch of medicine which is becoming deservedly popular.

Mr. Alexander White, Chief Sanitary Inspector of the Provincial Board of Health, Ontario, has transferred his office from North Bay to Spadina House, Spadina Crescent, Toronto.

Book Reviews

Primer of Physiology, Primer of Hygiene. Published by W. J. Gage and Company, Ltd., Toronto. Price 85 cents each.

These two books were originally written by Ritchie and Caldwell and are revised for Canadian use by Col. George G. Nasmith and Miss Jean Browne of the Canadian Red Cross Society. They are the first Canadian health series of books for elementary schools, and are correct and up-to-date from the standpoint of medical science. The first book introduces, in a judicious way, the elements of physiology and sanitation to children of nine or ten years of age at a time when children are naturally inquiring the reason of things in their own environment. This inquiry is directed towards the mechanism of their own very wonderful bodies. It introduces, in the second part of the book, enough simple bacteriology to teach children how not to pass on their germs to others, and how not to get other people's germs. "The Primer of Physiology" teaches the facts of physiology, in order that children may learn to take intelligent care of their own bodies. Throughout, the emphasis is placed on function and hygiene, rather than anatomy.

A Text-Book of Simple Nursing Procedure for High Schools. By Amy Elizabeth Pope. Published by G. P. Putnam's Sons. Price $2.50.

This is an admirable book for students, covering in a most practical and concise way the subject with which it deals. It gives me much pleasure to recommend it for teaching purposes in the High Schools of our country.

Applied Psychology for Nurses.

The author dealing with this new study for Nurses is practical in the strictest sense. The book confines itself to the information that is necessary for Nurses, and it should be a great asset to them in their professional duties.

Tubercle Bacillus Infection and Tuberculosis in Man and Animals, by Albert Calmette, Associate Director Pasteur Institute, Paris. Translation of the second French edition by Willard B. Soper, M.D., Saranac Lake, N.Y., and George Smith, Ph.D., Yale Medical School. Large 8vo of 714 pages, 31 figures, 25 colored plates. Williams and Wilkins, Baltimore, 1923. Price $8.00.

The English speaking medical world owes a debt of thanks to the translators of Calmette's great work *"L' Infection bacillaire et la Tuberculose chez l'homme et chez les animaux."* It is a summary of the researches and conclusions of this great investigator and brilliant scientist, who is the acknowledged authority on experimental tuberculosis to-day. With his own observations is incorporated the most important published work of other investigators in the same field. Within recent years much has been learned of the phenomena of infection and reinfection with their bearing upon the development of immunity and these phenomena go far to explain many of the clinical and pathological observations which formerly were of obscure origin or were explained upon false premises. The relation of pathological changes to altered conditions of resistance through reinfection and spread is now made clear by a study of these contributions. Numerous problems yet remain to be solved and our knowledge of the process of immunity is yet in its infancy. Here we have presented to us the ripe experience of an outstanding scientific worker and a summary of what is known at the present time. Not only is it replete with facts, but the author gives freely his own ideas and hypotheses in explaining obscure phenomena, giving us a book replete with stimulating ideas, and closing with an outline of practical application of our knowledge.

No physician, pathologist, bacteriologist or physiologist can dip into this masterpiece without the greatest pleasure. Most readable, beautifully illustrated with color plates, it is a joy to the student of advance in medicine.

Part one deals with the tubercle bacillus and processes of infection by it, part two with experimental tuberculosis, part three with processes of defense, including tuberculin and its reactions, part four with natural immunity and processes of immunization.

The closing chapter deals with scientific principles which should serve as a basis for prophylaxis against tuberculosis. From this chapter we quote the following paragraphs in the hope the reader may be stimulated to read the volume presenting the facts upon which these conclusions are based.

"Among the 'new facts' which, during recent years, have considerably added to our knowledge of tuberculosis, attention should be called to those which should in future dominate the whole prophylaxis of this disease.

They may be summed up in the three following propositions.

1. Infection with the tubercle bacillus is abundantly distributed and carried by civilization throughout the world. In the immense majority of subjects susceptible to tuberculous infection (men and cattle principally), it is compatible with the appearance of health. For their organism the tubercle bacillus most frequently remains an inoffensive parasite.

2. It is only the massive infections with the tubercle bacillus, occurring in the young or in adults free from all previous infection, which determine from the beginning a generalized or localized disease of the lymphatic system.

3. The benign tubercle bacillus infections, which remain occult or latent for years, induce, in those who harbor them, a peculiar state of resistance to new infections. When the latter are superadded they call forth, accordingly as they are more or less abundant, virulent and near together, a special phenomenon of intolerance for the tubercle bacillus (which we have studied under the name of the phenomenon of Koch).

These disseminators of bacilli and the bacilli which they scatter are so numerous that it is no wonder that in the cities the children up to five years are already contaminated in a proportion of 55 per cent. and that beyond 15 years, scarcely 5 per cent. of the total population has succeeded in completely escaping infection.

The tubercle bacillus, however, does not exist everywhere; it is not "ubiquitous," as it is too often incorrectly stated. It is found only where deposited by man or animals who harbor it. And we know that when only a small number of virulent organisms enter by accident into an organism entirely free of infection, there results in the immense majority of cases, only a benign infection which may remain indefinitely hidden or latent and which is revealed onlyy by tuberculin reactions.

The real and serious danger therefore, as regards the organism entirely free from tuberculous infection, lies in massive inoculation. For the bearers of latent infection it lies in the repeated super-infections which develop their intolerance to the bacilli and aggravate their lesions through the increasing intensity with which the phenomenon of Koch produces itself.

For the future it is an evident truth that tuberculous infection is brought about only by the bacillus, and that the severity of the infection is above all dependent upon the number, quality and source of the infecting elements, as well as upon the paths chosen by the latter for entering into the organism.

Each one battles against the infection with his natural weapons, which are his leucocytus, hihs lymphatic glands, his cellular ferments, and his hereditary or acquired qualities of resistance or intolerance to the bacillus.

From the strictly medical point of view the question of tuberculizable soil has remained rather obscure from the fact that certain clinicians still regard as candidates for tuberculosis those individuals who, on clinical examination, present what by agreement are called the characteristic 'stigmata' inherited or acquired hereditary dystrophies, anatomical deformities of the thorax, chronic swellings of the glands, demineralization, signs of Grancher, etc.

Now these 'candidates for tuberculosis' in reality harbor bacilli. All of them react to tuberculin. Those among them who are not exposed to frequent and massive reinfections acquire the state of immunity peculiar to the bearers of latent lesions. The others, who are only too often obliged to live in a more or less intimate contact with disseminators of bacilli, are all the more likely to become phthisical as their natural means of defense are the more reduced.

Before all them and above all, our efforts at combating tuberculosis should be concentrated against introductions of infection and principally against the frequent and abundant ones.

It is necessary, in enviroments not yet infected, to constantly safeguard young children and young domesticated animals against this danger. To that end it is indispensable that these young children and young animals be prevented from con-

suming suspected milk which has not been heated for a sufficient time (at least 30 minutes at 70° or 15 minutes at 80°C) to insure the destruction of virulent germs. And it is not less indispensable to avoid possible contamination of food by bacilli from excreta. Indeed this contamination is unfortunately very frequent. It occurs not only by means of dirty hands, soiled linen, vegetables and fruits, but also through flies and by earth or dust from sewage fields.

Too many precautions cannot be taken against such materials. It is indeed well established that clean cities, provided with incinerators for their refuse and with a good sewer system cmoplete with a biological purification plant,—this is the case in a fairly large number of English cities for example,—have a tuberculosis morbidity and mortality infinitely lower than cities whose departments of hygiene are inefficient.

There is no necessity for disguising the fact that it will be a long and very difficult task to dry up the 'reservoirs of the virus,' namely those who expectorate bacilli. The expectoration of ill persons and cattle having open tuberculosis lesions, are and will remain the most formidable sources of contagion, not only for young children and young animals, but also for adults, since it is such open cases which usually cause the massive and frequent infections, of whose pernicious role in the genesis of phthisis we have already spoken." J. H. Elliott.

The Tuberculosis Worker, by Philip P. Jacobs, Ph.D., Publicity Director, National Tuberculosis Association. 8vo of 314 pages. Baltimore, 1923. Williams and Wilkins Company. Price $3.00.

This handbook on methods and programs of tuberculosis work is written by an author who for the past fifteen years has been an active worker on the staff of the National Tuberculosis Association. He has been active in the great development of antituberculosis effort during that period and has shown marked executive ability. Knowing intimately the work of this association and of the various affiliated state and local societies he writes from the inside, so to speak. The needs of large and small communities have been placed before him and his associates for advice and assistance. From his wide experience he has given us this outline of efficient methods and programs to be applied in any community. It is an outline full of valuable suggestions for the worker, whether health officer, nurse, clinic physician or layworker, whether a paid official or volunteer, in the multitudinous organizations which go to make up a successful program against tuberculosis. Appended to each chapter is a selected list of books and recent journal articles dealing with the phase of the subject under discussion. It is a standard handbook for any worker who has an administrative post.

J. H. Elliott.

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